

Nuclear Accidents and the Impact on Animals
COMMITTEE RECOMMENDATIONS
5 May 2011

A committee of Subject Matter Experts (Appendix A) from Japan and the United States was convened May 2-3, 2011 to discuss animal issues resulting from the Fukushima Daiichi Nuclear Power Plant accident.

Based on the information received to date and the discussions from this Summit, it is our recommendation that every effort should be made to immediately address the needs of animals in the identified restricted zones.

The committee feels strongly that human safety must come first. To that end, we have spent considerable time developing recommendations and procedures to ensure human and animal safety and well-being. The committee assumes that groups working in these zones will be properly equipped and trained, follow recognized safety protocols and procedures, and be equipped with radiation detection devices.

This important task will require considerable coordination, collaboration, and cooperation among all of the groups involved in the rescue and recovery processes if they are to be successful in reaching the greatest number of animals in the shortest period of time.

The committee sees this as just the first step of a long term commitment to addressing animal needs resulting from a nuclear accident. We have included suggestions for long term monitoring and surveillance programs. This type of information will be invaluable for dealing with this specific disaster and for assisting communities across the world as they plan for similar incidents.

We appreciate your willingness to review these documents and it is our sincere hope that the National Government and the Prefecture will consider the immediate implementation of our recommendations.

Companion Animal Recommendations

The committee feels strongly that every effort should be made to keep humans and their animals together. Emergency evacuation and sheltering plans must include animals and whenever possible, identify co-located shelters where animals are housed adjacent to their owners. The Committee recommends that stray and/or abandoned animals be sheltered in their home territory to enhance the reunification process. The Committee does not support the exportation of pets out of the country under any circumstances.

The committee identified four primary components associated with the re-location of companion animals from a restricted area: *rescue*, *decontamination*, *transport*, and *sheltering*.

Rescue

For the purpose of this document, *rescue* is defined as the successful capture and re-location of animals from a restricted zone. The Committee assumes that all animal rescuers will adhere to IAEA recommendations when working in an area exposed to radiation. This may result in limited time for the rescuer to complete their work. However, there are strategies that can be employed prior to entry into a restricted area to expedite the removal process:

- Accurate population and aggregate data;
- Proper capture and containment equipment;
- Specific training in:
 - Animal assessment
 - Animal search and rescue
 - Capture and containment;
- Strategically placed feeding stations to encourage movement of animals out of a restricted zone;

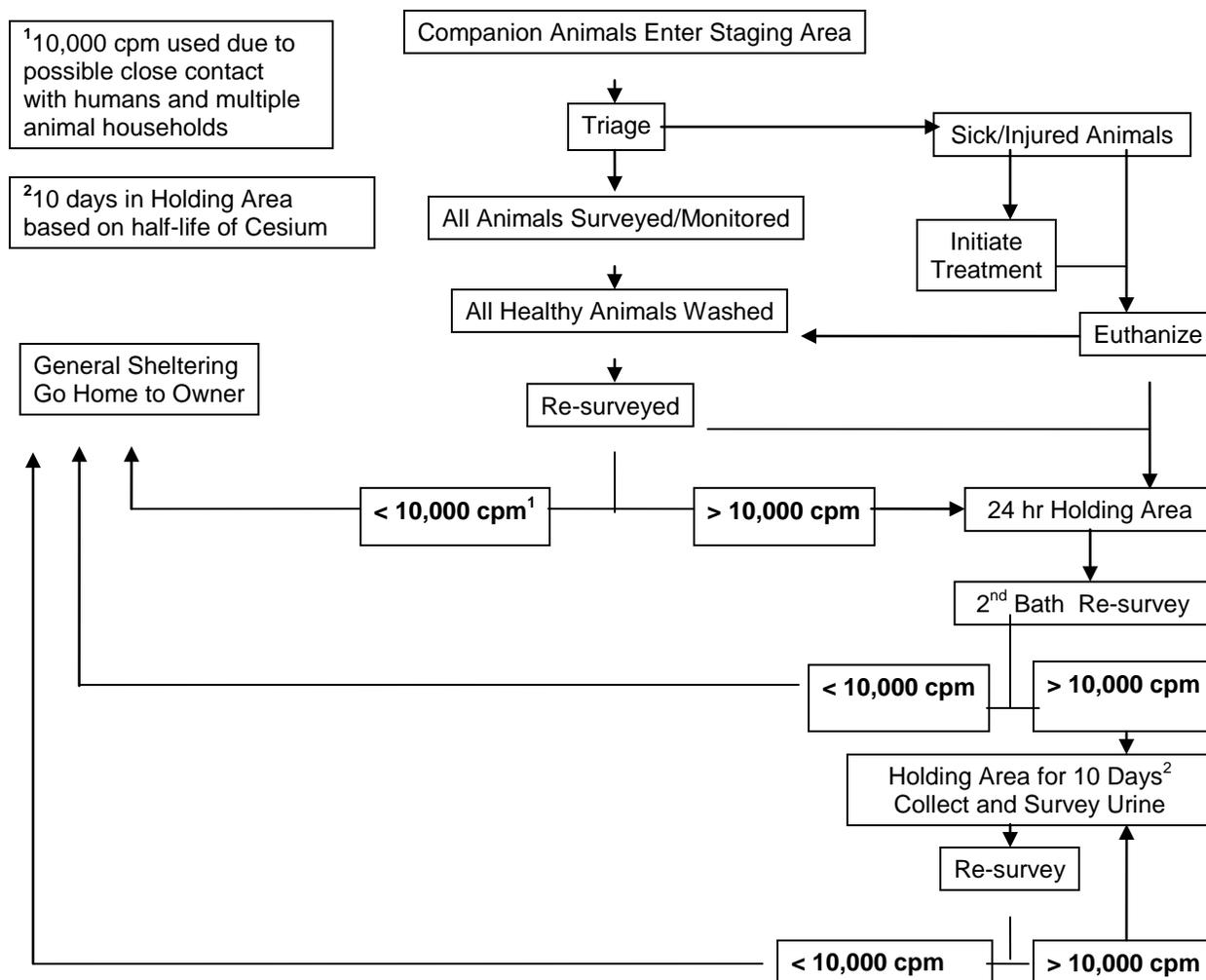
A primary goal for any rescue operation is the reunification of pets with their owner. To ensure reunification, rescue groups must employ methods for accurately identifying and tracking animals in their care. There are a number of identification methods available from collars to microchips. The tracking system provides an accurate recording of the location of the animal (including GPS coordinates) through every stage of the rescue process - from initial contact through sheltering.

Decontamination

Animals from the restricted area will likely need to be decontaminated before entering a shelter or being reunited with their owners. The initial evaluation and decontamination process should be conducted in an area between the restricted zone and the “safe” zone – typically referred to as the “warm” zone. Careful consideration should be made for the selection of this site ensuring that adequate space and water are available with easy access and room for temporary field sheltering.

We assume that every team will be equipped with a real time dosimeter, survey meter, and proper Personal Protective Equipment (PPE).

The decontamination process entails partial or complete bathing of animals with soap and warm water. Consideration for handling contaminated waste water should be included in the decontamination plan. Given the amount of time these animals have been in the restricted zone, our suggestion is that every animal brought to the staging area be surveyed, washed, and re-surveyed. The following flow chart outlines the recommended decontamination process.



The animals held in the Staging Area for decontamination will require temporary sheltering. This will require some special considerations:

- Adequate space and separation (based on survey readings);
- Dedicated walking and waste area;
- Wire kennels vs. vari-kennels;
- Regular and scheduled cleaning and disinfection;
- Possible contamination of environment;
- Security and protection of animals and shelter workers.

Transport

Initial transport refers to the movement of animals from the restricted zone to the staging/decontamination area. If possible, the animal should be surveyed prior to transport to avoid vehicle contamination.

If it becomes necessary to transport contaminated animals, procedures should be in place for the proper and effective decontamination of vehicles and associated equipment. The type of

transport vehicle selected should be appropriate for the weather conditions, but in most cases, an open-air vehicle can be used for short distances¹. Dedicated vehicles should be used for animal transport from field to staging area. If those same vehicles are used for transport to shelter, a complete decontamination process must be followed.

Sheltering

When animals have been effectively decontaminated, they will be transported to the designated shelter area. Every animal brought to the shelter should be surveyed upon entry, periodically throughout their stay, and prior to departure².

Livestock Recommendations

The Committee reviewed and concurs with the MAFF flowcharts (22 April 2011) for livestock. The following recommendations are provided to support the ongoing surveying of animals in the restricted zones and to ensure the rapid movement of viable animals out of the affected areas.

1. Livestock in the 20 km zone needs to be rescued, moved or humanely euthanized.
 - a. Determine livestock location.
 - b. Limit worker's exposure based on IAEA recommendations.
 - c. Locate feed and capture stations outside of 20 km zone.
 - d. Co-locate testing stations with feed and capture facility.
 - e. Survey and decontaminate and relocate animals according to MAFF protocols.
2. Plume zone (Planned Evacuation Zone) livestock should be surveyed and evacuated according to MAFF protocols.
3. Livestock evacuation should be completed before people are evacuated.
4. Every individual animal may not need to be surveyed. One representative sample per management location may suffice.
5. OIE euthanasia guidelines should be followed.
6. The Government of Japan (GOJ) should mobilize adequate personnel to ensure surveying and movement of animals out of restricted area.
7. Train additional personnel in use of PPE and radiological surveillance equipment to expedite movement process.
8. GOJ will ensure adequate transport vehicles are available for rapid movement of animals.
9. Committee supports MAFF's safe forage protocol.
10. Long term monitoring of valuable breeding stock is recommended.

Wildlife Recommendations

The Committee supports the principle of 'one world one health'; the health of people, domestic and wild animals, and the ecosystem as a whole are all inextricably linked. The Committee makes the following short and long-term recommendations to ensure that wildlife and biodiversity are fully integrated into emergency plans.

¹ For recommendations on the type of vehicles to use for transport, contact IFAW representative.

² Contact IFAW representative for "Best Practices" on Emergency Animal Sheltering

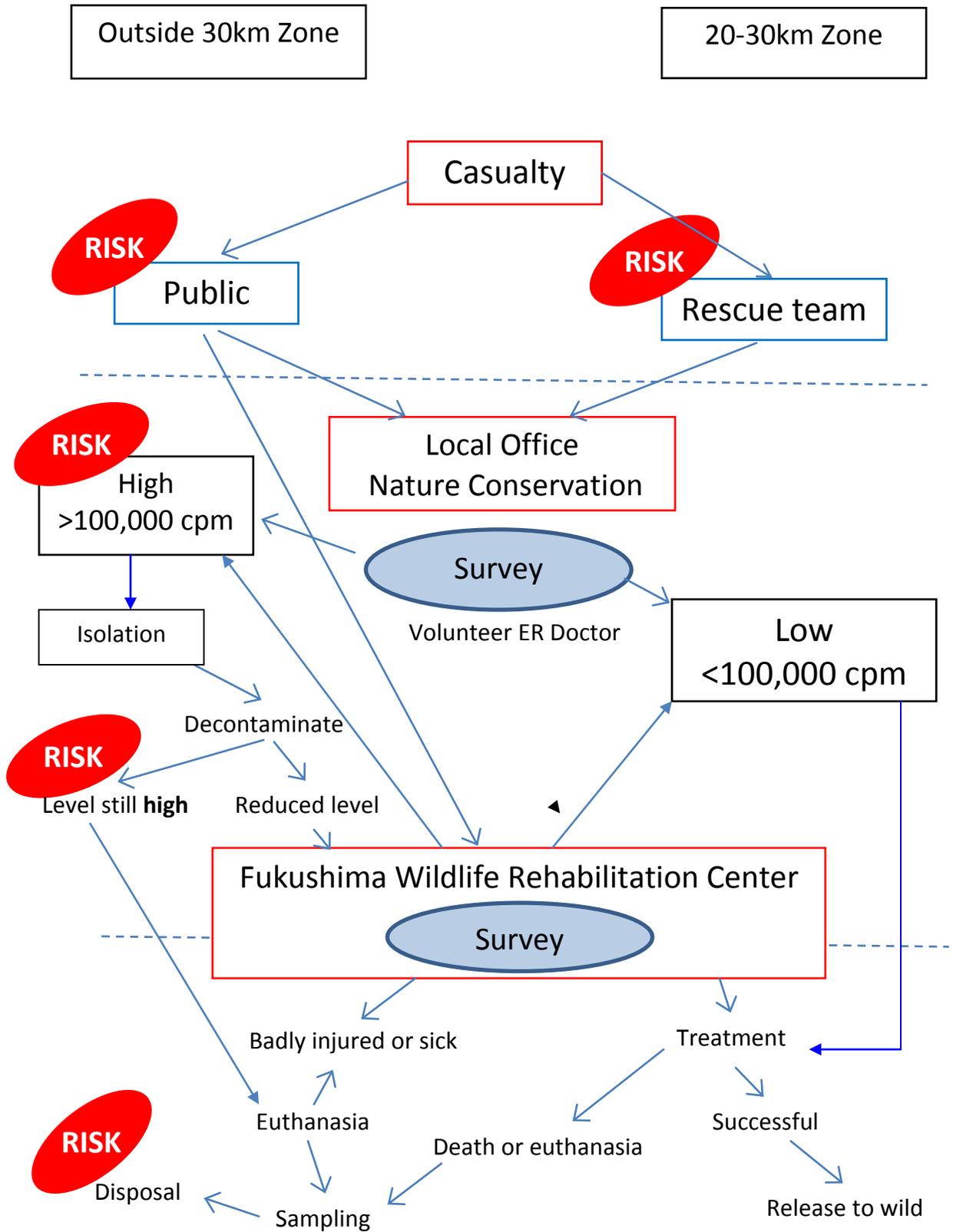
Short Term Recommendations

- Start both rescue and monitoring procedures immediately³;
- Utilize and reinforce the capacity of the Fukushima Wildlife Rehabilitation Center (FWRC);
- Wildlife can move over large areas and therefore monitoring beyond the presently recognized zones is necessary.

The committee is aware that rescue only applies to a small range of wildlife taxa and that monitoring should include a wider range of taxa – including invertebrates, fish, reptiles and amphibia which are unlikely to be rescued as individuals.

Recommended actions are illustrated in the following flowchart. “Risk” in the flow chart indicates those stages at which a radiological risk to people may occur. The decontamination process referred to in the flow chart must be species appropriate and may include washing, or feeding uncontaminated food for an appropriate time whilst holding contaminated animals isolated from uncontaminated animals (or both).

³ Radiological and biological monitoring methods (beyond surveying with a suitable meter device) are yet to be determined depending on capacity and practicality



Long-term Recommendations

It is highly urgent to initiate sampling of wildlife in order to monitor changes in accumulation of radioactive substances and to secure samples of seasonally migratory species. In order to attain this, it is necessary that the Ministry of the Environment of Japan (MOE) support both short-term and long-term monitoring of wildlife by field workers and radiation specialists.

The Committee recommends the standardization of methods for monitoring the effects over time on wildlife health and biodiversity. Lessons learned from the Chernobyl disaster can be used to guide methodology. There is a need to develop capacity (both personnel and facilities) both to monitor this incident in the long term (at least a decade) and also to be capable of responding appropriately to another incident – wherever it may occur.

The following are some comments and recommendations by the committee for consideration in determining short and long term monitoring strategies:

- This is not just a problem locally, nor just for Japan – but a worldwide problem and needs an international approach. For example, it is necessary to monitor the long term effects on migratory species such as:
 - Osprey
 - Peregrine falcon
 - Wildfowl
 - Albatross
 - Shearwater
- The affected area involves both terrestrial and marine habitats;
- The exclusion zones will produce a ‘safe haven’ for animals which will change distribution of wildlife populations;
- Wildlife can travel freely between zones and will do so, depending on their home range – eg:
 - Carrion eaters may travel into restricted zones to feed on carcasses
 - Herbivores may take refuge in restricted zones but move out into cultivated fields to feed
 - In the marine environment birds may feed in the restricted zones and fly many miles to feed chicks on offshore islands
 - Long term changes of land use will have profound effects on wildlife populations;
- Another issue that needs to be considered when monitoring changes in wildlife populations is the effect of the tsunami on the ecosystem – this is not necessarily a consideration for domestic animals;
- Although it is accepted that different species may have different susceptibility to the overall effects of this incident, a ‘keystone species’ approach selecting representative species from different environmental niches for more in depth studies may provide a practical way of monitoring changes over time;
- Although endangered species may be of particular concern, and will no doubt be the subject of long term surveillance, selecting common and readily available species for study has the advantage of numbers and availability for data collection;

- In the marine environment, it is possible to obtain samples from marine birds where they come ashore, eg on offshore islands for breeding;
- Readily available sources of carcasses for study material are available from:
 - Animals hunted for food or killed as part of control programs for alien species or 'nuisance wildlife'
 - American mink
 - Crab eating raccoons
 - Japanese Macaque
 - Great Cormorant
 - Wild boar
 - Various species of wildfowl
 - Roadkill - especially raccoon dogs
 - Wildlife casualties (carcasses collected at FWRC)
- The committee recommends a multidisciplinary approach to monitoring, utilizing input from experts in:
 - Radiation
 - Pathology
 - Wildlife Health
 - Genetic
 - Ecology
 - Population biology
- In the short term, activities conducted to address agricultural or companion animal issues may impact wildlife and this should be considered when developing these strategies:
 - Some disposal methods for carcasses could present a threat to wildlife;
 - Feeding of domestic animals (eg feeding companion animals in place or feeding to draw animals to specific locations) within the restricted zones will also attract wildlife;

Let us save Fukushima. Let us act together in Fukushima and learn from Fukushima for the future of humanity.

Appendix A Subject Matter Experts

Japanese Delegates:

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American Delegates:

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