

Appendix 2: Methodology for the Removal of Barred Owls

The following is the protocol developed for removal under the final Barred Owl Management Strategy (Strategy), including documentation requirements for designation as an implementer and removal specialist. It would apply to all implementers involved in lethal removal the Strategy as well as the capture and euthanize option.

The U.S. Fish and Wildlife Service (Service) intends that any removal of barred owls for purposes of the Strategy and associated MBTA permit would be conducted in a professional manner using methods that are safe, humane, and effective while meeting the need to reduce barred owl populations in treatment areas. We adopt the following guidelines and protocols to ensure that barred owl removal meets this intent through appropriate consideration of methods, timing, and safety. The included removal methods would ensure humane treatment of all affected barred owls. Every effort would be made to minimize the risk of unnecessary injury or trauma to barred owls or non-target species.

Barred/spotted owl hybrids may also be removed, as they have the same impact on spotted owls as barred owls, though this is not required. Implementers may choose to leave hybrids extant. Because visual identification of hybrids is more difficult, particularly at night, there is a specific protocol for the identification of hybrids prior to removal (See Section A2.3.3).

Minor changes to this methodology may occur during the implementation of the Strategy if information and experience justify such changes to make removal safer or more effective, while maintaining the intended high standards for humane and ethical treatment of affected animals. Any proposed changes would require approval by the Service prior to their adoption and implementation. These guidelines and protocols, as presented here, apply specifically to actions conducted under the Strategy, but may be used or adapted to other projects following any needed environmental review of those future projects.

A2.1. Requirements for designation as an implementer.

To receive designation as an implementer for actions under the Strategy, requesting entities must provide the following information.

A2.1.1 Information for specific removal efforts:

For barred owl removal in the range of the northern spotted owl (excluding Marin and Sonoma County and the California Cascades Province), before beginning barred owl removals, each individual or group designated to implement the Strategy must submit the following information:

- Maps of the approximate area where barred owls will be removed, preferably in the form of geospatial data (e.g., a geodatabase), but paper or electronic maps would also be acceptable, as long as the maps provide adequate reference points. These maps should also include locations of primary human dwellings, established open campgrounds, and other locations with regular human use, showing the 0.25 mile no-shooting buffer zone around these areas, and locations of known spotted owl sites.

- A list of veterinary resources and wildlife rehabilitation facilities and specialists to be contacted in case of accidental injury of non-target wildlife.
- A list of requested individuals to be designated as removal specialists. These individuals must be approved by the Service as the permit-holder, prior to any removal work.

For barred owl removal in Sonoma or Marin County, or within the California spotted owl range or potential invasion pathways (including the California Cascades Province in the northern spotted owl range):

- A general map or description of the areas where barred owl removal may occur. This can be at a regional or county scale.
- A list of veterinary resources and wildlife rehabilitation facilities and specialists to be contacted in case of accidental injury of non-target wildlife.
- A list of requested individuals to be designated as removal specialists. These individuals must be approved by the Service as the permit-holder, prior to any removal work.

The Service will coordinate with the Service field offices local to the removal activity to determine if additional conditions are required specific to listed as endangered or threatened, under review, candidate, proposed for listing, and non-essential experimental populations. The Service will provide maps and other information depicting areas where implementers are not to travel off-road or off-trail and may provide other conservation measures as needed to avoid and minimize effects to these species from actions under the Service permit.

Any proposed changes to the above information must be submitted with the annual report. Changes in in the boundaries of the barred owl removal area may be updated at any time, but must be approved by the Service prior to implementation.

A2.1.2 Information required for designation as a removal specialist:

Prior to being designated as a removal specialist authorized to remove barred owls under the Strategy, each individual requesting designation must provide documentation of training or experience in the following areas. The Service will review the request and may ask for additional information. The Service reserves the right to determine who would be designated as a removal specialist under the Service MBTA permit.

- Barred owl and spotted owl identification, using visual and auditory means.
- Firearm Safety Training.
- Firearm skill and accuracy.
- Understanding of the methods for removing barred owls with firearms.
- Barred owl handling and human field euthanasia methods.
- Experience with barred owl removal.

Experienced removal specialists should ensure that their documentation includes:

- Total number of years and dates of previous removal experience.

- Number of barred owls removed.
- Number of barred owls injured and not recovered.
- Any injury to non-target wildlife.
- To demonstrate understanding of the protocol, describe at least one situation where they decided not to shoot the target bird, or if that situation has not occurred, a hypothetical situation in which they would not shoot an owl.

Individuals who have received training but have not yet conducted independent barred owl removal should ensure that their documentation includes:

- The name of the trainer who provided training in barred owl removal methodology.
- Dates on which they observed at least three separate successful barred owl removals by the trainer.
- Dates on which they identified and successfully removed at least four barred owls under the supervision of the approved trainer.
- Documentation that the trainer has certified them as being ready for independent removal.

Changes in personnel wishing to be designated may be updated at any time by requesting addition or removal of individuals as removal specialists and submitting the information describing their qualifications as described above. The Service must approve the request before the individual is authorized to remove barred owls under the Service's MBTA permit. The Service reserves the right to disapprove a proposed removal specialist for any reason. Any removal specialist found to violate the protocol may have their designation revoked. The Service reserves the right to conduct field visits at any time to observe any barred owl removal conducted under the Strategy.

A2.2. Considerations Prior to Conducting Removal Activities

Prior to initiating removal, any preliminary monitoring required for the permit should be completed (See Appendix 5.1.1.).

A2.2.1. Timing of Barred Owls Removal

Removal of barred owls may occur at any time of the year. However, we recommend focusing activities before and during the barred owl nesting season (early spring through mid-summer), and in the fall. Past studies have demonstrated that barred owls are easier to locate and remove during these periods.

To reduce injury and death of dependent young, we recommend, but do not require, the following:

- initiate barred owl removal on management areas in the fall, where practicable. This reduces the population at a time when there are no dependent young. However, these areas may be recolonized quickly, requiring additional removal the following spring.

- initiate removal as early as possible in the spring, prior to barred owl nesting and the hatching of eggs, where practicable. This is a very effective time for removal, opening sites to potential colonization by spotted owls prior to their breeding season and reducing pressure on any nearby occupied spotted owl sites for nesting. The time of nest initiation and egg hatching will vary across the range of the Strategy, therefore implementers should use the best available information for their areas in defining these dates.
- If barred owl nests are found during the period when they are likely to have dependent young, consider delaying removal of the adults until the young can be removed or are independent, if practicable.
- If fledgling barred owls are located with adults, or have acquired adult feather characteristics, remove young prior to removing adults.
- To reduce the potential to disturb marbled murrelets during critical nesting and feeding periods, no shooting is allowed within 0.25 miles of marbled murrelet nesting habitat during the marbled murrelet breeding season for the two hours before and after dawn. Marbled murrelet nesting habitat definition can be found in the most recent marbled murrelet inland survey protocol (Pacific Seabird Group 2024) or by checking with the USFWS prior to initiating removal efforts.

A2.2.2. Identification of Barred Owls Prior to Removal

Positive identification of barred owls prior to removal must be confirmed by either two individuals (removal specialist and a trained observer) or by a single removal specialist ideally identifying the bird by both visual and auditory features. In the absence of vocalizations, barred owls may be removed by visual identification only **if** an experienced removal specialist has a clear and unobstructed view of the owl and is able to detect multiple components of the species' characteristics. Note that barred owls in the West may exhibit muted visual characteristics such as the extent of barring on the front chest. If there is any doubt about the species identification, no removal attempt shall occur, and a new attempt may be conducted at a later time.

Fledgling and juvenile barred owls may be removed **if** they can be positively identified as barred owls, such as older juveniles with developed chest and abdominal contour feathers. Young birds in the nest and/or direct contact with adult barred owls may also be taken. As with adults, if there is any doubt as to their identification, no removal attempt shall occur, and a new attempt conducted at a later time.

Persons participating in removal activities must be able to accurately identify spotted owls and barred owls using both visual and auditory means, and confidently distinguish between the two species. Individuals not experienced with such identification must receive training and testing in owl identification prior to removal activities (see training section below). Individuals who have not completed at least a year of removals or over 25 removals would need to receive testing on owl identification.

A2.2.3. Preparation for Injury of Barred Owls or Accidental Injury of Non-Target Species

While the protocol is designed to substantially avoid injury to non-target species, such injury may still occur. Prior to conducting barred owl removal activities, parties responsible for removal shall identify veterinary resources and wildlife rehabilitation facilities and specialists within reasonable transport distance of the removal sites. Those involved in removal should have contact information available during field work. Removal specialists should be aware of appropriate handling techniques for safe and humane transport of injured animals to rehab facilities and have any needed equipment (e.g., carriers).

Any barred owls wounded, but not killed, during removal shall be humanely euthanized using methods approved by the Service or by the American Veterinary Medical Association, where possible. All people involved in removal should be trained in effective, humane methods of field euthanasia and have all the necessary material available at all times during removal.

A2.3. Guidelines and Precautions for Lethal Removal

The following guidelines are designed to minimize the risk of nonlethal injury or suffering of barred owls, or the injury or death of non-target species, during lethal barred owl removal, while ensuring the safety of field personnel and the public.

A2.3.1 Lethal Removal Methods

When setting up the location for barred owl removal, reasonable effort should be made to limit the shooting distance to no more than 30 yards to minimize the risk of nonlethal injury or prolonged death. Removal specialists should seek a removal location that offers multiple unobstructed perch sites with clear shooting opportunities within the preferred distance of 20 to 30 yards prior to attempting to lure the barred owl into shooting range.

Barred owls will be lured to the removal specialist using an amplified megaphone, or similar device, to broadcast digitally recorded barred owl calls, alternating with listening for responses. The calls and mix of calls are at the discretion of the removal specialist, but generally include single-note hoot, 2-phrase hoot, ascending hoot, and pair duet calls. Generally, removal specialists will call for about 15 minutes at a location before moving on if no barred owls are heard. However, conditions or topography may require a longer period, at the discretion of the specialist. If barred owls are heard, calling may continue intermittently as long as there is some potential for the barred owl to be lured in. The specialist may also relocate to better access the barred owl.

For area-based removal, calling stations should be located about $\frac{1}{4}$ to $\frac{1}{2}$ mile apart, taking advantage of topographical features to cover the forest lands within the area. For efforts to locate and remove previously reported barred owls, multiple calling stations may be required to find the barred owls for removal.

Before any removal, positive identification of the barred owl is required, confirmed by either two qualified observers (two qualified removal specialists or one specialist and one individual skilled

in owl identification) or by a single qualified removal specialist identifying the bird by both visual and auditory features. Barred owls may be removed in the absence of vocalizations, but only if the observer has a clear and unobstructed view of the front of the owl and is able to detect multiple components of the species' characteristics.

To avoid disturbing nesting spotted owls, removal should generally not occur within 300 yards line of sight of a known active spotted owl nest during the critical breeding period for spotted owls (March 1 to July 31, or as established locally). To avoid luring barred owls close to an active spotted owl nest, we recommend that any barred owl calling location be initially located at least 0.25 miles from known active spotted owl nests, and in a direction that would not lure the barred owls towards the spotted owl nest.

To avoid potential injury to spotted owls, if one or more spotted owls are detected in the immediate vicinity of the barred owl at the removal location, it may become difficult to "track" individual birds and ensure that the spotted owls are not in the line of fire. This is especially difficult during agonistic encounters between the two species. Unless the barred owl can be lured to at least one-quarter mile away from the spotted owls and the spotted owls do not follow, lethal removal at that location shall be postponed to a later date to minimize the risk of accidental injury or death of a spotted owl, either from removal or inter-species encounters. However, if a second observer is available who can keep track of the spotted owls, the removal effort can continue as long as the spotted owl location remains known.

Lethal removal shall be done by shotgun of 20 gauge or larger bore, using non-toxic lead-substitute shot (e.g., Hevi-shot, steel). Lead shot may not be used. Rifles, pistols, or other firearms or methods are not authorized under this protocol unless explicitly approved by the Service for specific situations or occasions. "Quiet" shotguns (e.g., shotguns modified to reduce noise) may be used to reduce impacts to wildlife or humans, if allowed under State or local agency rules and regulations. Before initiating removal efforts, and periodically during the season, removal specialists should test the pattern and distance characteristics of their gun to ensure they know the capabilities of the gun and loads. We recommend that shotguns be equipped with an attached night scope or other gunsight designed specifically for night use for accurate and precise aiming in dark or low light conditions (e.g., red dot sight mount).

All shots must be directed at barred owls which are **stationary** on an unobstructed perch and present a full, frontal and unobstructed view. On-the-wing shots are not authorized under this protocol.

If barred owls are wounded, but not killed, every reasonable effort shall be made to locate any injured barred owls and euthanize it quickly and humanely. All personnel must be trained in field euthanasia and carry the needed equipment at all times during any removal attempt.

Any injury or death of a non-target species must be immediately reported to the designated Service contact. Any injured animals other than barred owls should be transported to a licensed rehabilitation facility. In addition to the immediate reporting to the Service contact, the circumstances surrounding such unintended injury or death must be described in a written incident report sent to the designated Service contact within 3 business days of the incident; this information must also be included in the annual report. If the non-target species is a listed

threatened or endangered species (e.g., spotted owl) no further removal activities may be conducted until the Service reviews the incident report and authorizes such activities to resume.

In situations where firearms cannot be used or their use is inadvisable due to safety concerns, local regulations, or the density of human habitation, removal specialists may capture and euthanize barred owls, see Section 2.4 for additional details.

Carcass Recovery and Disposition: Reasonable effort should be made to retrieve barred owl carcasses immediately after the shot while allowing for safety considerations, particularly at night in rough terrain. If the carcass cannot be located at the time of shooting, the removal specialist should return to the site as early as feasible the next day to resume the search. If the carcass cannot be located within a reasonable time, the removal specialist will describe the situation on the data card, including any information regarding the likelihood that the shot may have missed, or that the bird was injured and escaped. Any such incident reports will be appended to the annual report for the project.

The following data must be recorded for each carcass:

Removal date and time, removal specialist's name, specific location (Universal Transverse Mercator (UTM) coordinates are recommended), name of other persons assisting or observing, and permit number under which the specimen was collected.

To improve our understanding of barred owl populations, the following physical measurements should be taken from the carcass if possible: body mass, foot-pad length, and sex (if known) (Baumbusch 2023, pp. 85, 113). This information allows estimation of the body condition of the barred owl.

For each carcass recovered, three photographs of the carcass are required – 1) the front – including head, chest, and tail, as well as a clear view of the lower abdomen; 2) the underside of the tail, flared out so that the middle tail feathers are fully visible; and 3) the underside of the spread wings to allow aging of the specimen. If a carcass could not be safely recovered, this should be noted on the data form.

Once the data and photographs are collected, the carcass should be “buried” on site by placing under duff, branches, or logs to secure the carcass without disturbing the soil. The location should be out of sight of roads, trails, or human habitation. If this is not possible or advisable, carcasses may be transported to an appropriate disposal facility. If transported from the removal site, carcasses must be tightly double bagged to avoid spread of disease. Carcasses may also be transmitted to an entity that has indicated interest and holds the appropriate MBTA and State permits to receive or dispose of the specimen and who have indicated with an official letter their interest in accepting the donation.

A2.3.2 Safety

Lethal removal involving firearms is inherently dangerous; more so under the evening or darkness conditions likely to be optimal for barred owl removal. The safety of the public and the

persons involved in the activities is of utmost importance. Therefore, the following measures must be employed to ensure the safety of all involved.

All personnel involved in lethal removal must have received firearm safety training and demonstrated skill, accuracy, and precision with the shotgun to be used prior to conducting removal activities. Accuracy is critical to avoid wounding barred owls. Training should cover shotgun use and protocol, along with the ethical, logistical, and safety considerations of conducting the removal. Removal specialists or their employers are responsible for obtaining firearms safety training.

Removal specialists are responsible for obtaining all applicable State, Tribal, and Federal licenses and permits necessary for possession and use of firearms, and for their transport to and from the study area. Removal specialists are responsible for meeting all safety and operational requirements pertaining to those permits.

Removal specialists must observe all laws, regulations, ordinances, (including State, Tribal, and local, as applicable) and site-specific requirements regarding use of firearms on public lands, near human habitation, within parks, etc. At a minimum, we require a no-shooting buffer zone of 0.25 mile around occupied dwellings, established open campgrounds, and other locations with regular human use. Prior to and during removals, the removal specialists or observers must assess the area for potential human presence (homes, tents, vehicles) and appropriate buffers must be applied.

Individual landowners or managers may establish other requirements based on their knowledge of particular conditions or areas within the study area. Where conflicts with other human uses may occur, the removal specialists should attempt to draw the barred owls away from such situations to favorable removal locations through well-planned calling. A “silent” or other legal sound-suppressed shotgun may be used in areas where people may be disturbed if these are allowed under State, Tribal, and local laws or with the appropriate permits.

Appropriate local law enforcement, and agency law enforcement for the lands on which removals will occur, should be contacted prior to field work to minimize public concerns over nighttime discharge of firearms, or their use in areas where they are generally prohibited (e.g., parks), thus avoiding unnecessary law enforcement response. Coordinate with State, Tribal, and Federal agency biologists for the area where the removal will occur. Consider contacting local landowners to minimize public concern. No removal may be conducted in any area without the permission of the landowner on which the removal occurs.

A2.3.3 Lethal Removal of Hybrids

Hybrids between barred owls and spotted owls are generally rare and obvious hybrids are not commonly encountered. Hybrids are not specifically the focus of this Strategy but have the same effect on spotted owl populations and may be removed under this Strategy and protocol. Many first-generation hybrids (one parent of each species) do exhibit physical or vocal characteristics (or both) intermediate to the parent stock, but even these characteristics may be difficult to identify under removal conditions. Second or third generation back-cross individuals (e.g., cross

between a hybrid and a barred owl) are difficult to detect even in hand and usually closely resemble the non-hybrid parent.

Since the prescribed method for lethal removal does not provide an opportunity to inspect the individual “in hand” prior to the commitment to remove, identification will rely on a reasonable consideration of observational evidence under field conditions. All removal of suspected hybrids requires two individuals, including at least one removal specialist, both of which are specifically trained or experienced in the identification of hybrids. **If in doubt, removal specialists shall not remove the individual owl until additional follow-up can verify its identification as a hybrid.** If an owl is identified as a hybrid based on field characteristics, it may be removed with appropriate protocols ensuring the identity of the individual. We anticipate that most second-generation and later-generation hybrids that back-cross with barred owls will appear in the field as barred owls and will be removed as such.

Given the difficulty in identifying hybrids, inadvertent lethal removal of even a first-generation hybrid may occur and the hybrid characteristics may not be evident until the specimen is in hand. If an owl carcass appears to be a hybrid once in hand, the specimen should be photographed and retained for future analysis. Photos and notice should be sent to the Service within two days and the removal specialist will follow any instructions from the Service concerning the carcass. All confirmed incidences of the removal of hybrids should be reported to the Service as part of required annual reports. These are not considered a take of spotted owls.

If genetic testing of hybrids reveals that a suspected hybrid was removed, and was, in fact, a pure spotted owl, the Service will review the circumstances around the misidentification (Section A2.3.3.2 below) and may rescind the ability to remove hybrids under this Strategy.

A2.3.3.1. Identification of Hybrid Owls Prior to Removal

Identification of hybrid owls requires both visual and auditory observations. If there is any possibility that it could be a spotted owl, the bird must not be removed. The following identification protocol is specific to the removal of suspected hybrid owls. It is focused on insuring that spotted owls are not removed by accident. Hybrids are very uncommon in most areas, and removal specialists may have little experience with their identification. Therefore, we require two individuals (removal specialist and a trained observer) make a positive identification prior to removal. It may be worth waiting until an expert with experience of hybrid owls can verify the identification.

Visual identification of hybrids in the field can be very difficult, particularly at night when most removal occurs, so visual identification alone is not adequate for removal of suspected hybrid owls. The defining visual features for hybrids vary across specimens and are understandably more subtle in nature than the difference between the two species. The focus of this identification is to ensure that spotted owls are not identified as hybrids. While visual identification alone of a free ranging owl is often insufficient to positively verify a hybrid individual, it is still an important part of the identification protocol. Before removal, the shooter must observe a frontal view of the bird to eliminate the possibility that the targeted bird may be a spotted owl.

To ensure the suspected hybrid owls are correctly identified, the observers must hear the bird use a territorial defense song (e.g., 8-note hoot or descending hoot of the barred owl) numerous times (at least 6). The observer must hear multiple complete calls before making a decision to remove the hybrid.

If a suspected hybrid uses a standard barred owl territorial defense song eight-note hoot (sometimes called two-phrase-hoot = who-cooks-for-you who-cooks-for-you-too) and shows some definitive evidence of barred owl plumage characteristics, it can be removed per the barred owl removal protocol. Examine the specimen in hand and if there is any question, note this in the records.

If a bird **at any time** uses a typical spotted owl territorial defense song (4-note - hoot, hoot-hoot hoooooot) in its repertoire, then it may be a spotted owl. It is critical to realize that individual spotted owls do not always use the complete standard hoot. For example, individuals have been known to consistently drop the first note or add a tag note at the end, and different parts of the call attenuate at different rates over distance. **If there is any question as to whether the bird may be a spotted owl, no removal shall occur.**

If a bird gives multiple complete territorial defense song calls while visible, none of which can be clearly classified as typical spotted owl calls, the calls sound like a mix of barred and spotted owl characteristics, and the bird shows some definitive evidence of barred owl plumage characteristics, the bird may be removed. Examine the bird in hand for hybrid features.

All suspected hybrids should be recorded prior to removal, if it can be done without interfering with the positive identification of targeted owls in the field. While this is not required, it will assist in developing more definitive methods for identifying hybrid owls. All other aspects and requirements of barred owl removal apply to removal of hybrid owls.

A2.3.3.2. Hybrid Owl Carcasses

The carcasses of all owls identified as hybrids prior to removal and all suspected hybrids once in hand, will be tested for genetic composition. Carcasses will be sent to the USFWS or other qualified lab for genetic testing. These may be frozen if needed to allow time for transport. If the specimens are sent directly to a qualified lab, the USFWS will be informed upon shipping and the results will be shared with the USFWS as soon as they are received.

If the genetic results on any specimen indicate it is a full spotted owl, the removal specialist will cease any hybrid removal until the Service does a full review of the circumstances. The Service will document this information in the annual report.

A2.4. Guidelines and Precautions for Capture and Euthanasia

While most removal will involve lethal removal in the field, there may be occasional situations where firearms cannot, or should not, be used. In those cases, the owls may be captured and euthanized. We do not recommend this as a primary removal method as it includes added stress for the barred owls.

The following guidelines and precautions apply specifically during nonlethal removal of barred owls. They are designed to minimize the risk of injury, excessive stress, or suffering of barred owls during capture or the injury or death of non-target species.

A2.4.1. Live Capture Methods

Capture would be accomplished using techniques that minimize the risk of injury or mortality to barred owls, yet prove effective in capture. Any technique must be designed to secure the barred owl quickly, with the minimum potential for injury, and be approved by the Service. Currently, the Service would allow for utilizing Dho-gaza nets, foot-snare pan-trap, and noose poles. Additional methods may be allowed if they are shown to be safe, humane, and not increase the chance of catching non-target species.

Any captured animal must be removed immediately from the capture device. Personnel responsible for barred owl capture must be trained and experienced with the capture technique. When deployed, capture devices must be attended at all times by a person trained in the employed capture method. Euthanasia may be conducted immediately upon capture, or barred owls may be moved to a better spot for euthanasia, as long as this occurs as quickly as practicable after capture.

Any non-target species inadvertently or incidentally captured during the attempted capture of a barred owl must be inspected for injury and, if uninjured, released immediately at the capture site. Injured animals should be transported to a licensed rehabilitation facility immediately. Any injury or death of a non-target species must be immediately reported to the designated Service contact and a written incident report sent to the designated Service contact within 3 business days of the incident; this information must also be included in the annual report. If the non-target species is a listed threatened or endangered species (e.g., northern spotted owl) no further removal activities may be conducted by the designated entity until the Service authorizes such activities to resume.

A2.5 Training and qualifications.

All individuals conducting removal under the Strategy will be required to provide documentation of their experience or training to the Service, or the Service's designated representative, for the Service's approval. This should cover the following areas:

1. Barred and spotted owl identification, using visual and auditory means.
2. Firearm skill and accuracy.
3. Understanding of the methods for removing barred owls with firearms
4. Barred owl handling and humane field euthanasia methods
5. Experience with barred owl removal.

For individuals experienced with the removal of barred owls, the above information will be sufficient. This should include the number of years (and dates) of removal experience, number of barred owls removed and of any barred owls injured and not recovered, and any injury to non-

target wildlife. To evaluate the individual's understanding of the protocol, they must describe at least one situation where they decided not to shoot the target bird or if a real-life example is not available, describe a hypothetical situation in which this might take place.

For individuals not experienced with the removal of barred owls, include documentation of the following training:

1. Barred and spotted owl identification. This will be part of the classroom and field training and include a visual and auditory owl identification test. Specific training in the identification of hybrids is required for authorization to remove hybrids.
2. Firearm use, including shooting from various distances, and angles, shots taken at 20 to 25 yards, and using a target the size and shape of a Barred Owl with identified kill zones.
3. Training in the ethics of conducting lethal removal, including when to walk away and skill in the use of rapid and approved euthanasia methods for barred owls.
4. Understanding of the removal protocol and equipment, including
 - a. equipment requirements and safety check;
 - b. assessing surroundings and potential nearby human presence prior to any collection activity at a given location (i.e., dwellings, hiking trails, tent campers);
 - c. determining if spotted owls may be nearby;
 - d. selection of favorable removal locations, placement of callers, and call sequences
 - e. criteria for taking a shot or deciding when to walk away
 - f. data collection, including use of equipment and information/photos required.
5. All inexperienced personnel requesting barred owl removal authorization must obtain experience with identification and removal of barred owls in the field under the direct supervision of an approved trainer experienced in barred owl removal methodology. This includes:
 - a. Observe at least 3 separate successful barred owl removals by an approved trainer.
 - b. Correctly identify and successfully remove at least 4 barred owls under supervision of an agency-approved trainer.
 - c. Be certified by the trainer as ready for independent removal. The trainer may require more removals for a particular trainee if the trainer feel the trainee needs more experience to effectively and carefully conduct the activity.

The Service retains the right to require additional training or documentation, and to refuse to qualify individuals to operate under the Service MBTA permit at our sole discretion.

Literature Cited

Baumbusch, R. C. 2023. Foraging Ecology of Barred Owls where they are Outcompeting the Threatened Northern Spotted Owl. Oregon State University. Dissertation. 173 pp.