
APPENDIX B: Persistence and Practical Conservation Value

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B1 Persistence⁵²

A primary purpose for delineating EOs is to guide conservation (*e.g.*, site protection, environmental review, inventory, recovery efforts, research) for the Elements represented by those occurrences. It is therefore critical that EOs have **PRACTICAL CONSERVATION VALUE** for the Elements they represent. Persistence at a specific location typically establishes the conservation value of that location.

Generally, in order to qualify as an EO, the potential continued presence and/or regular recurrence of an Element at a given location is necessary. In other words, an Element must potentially persist at a location in order to be designated an EO. Evidence of likely ephemeral presence of an Element at a location, lacking persistence, should not result in the designation of an EO. For most Elements (especially perennial plant species, stable communities, and nonmigratory animal species), persistence is presumed to be established by evidence of presence. More specifically, for community Elements, stability is judged as persistence under natural processes for a time period specific to that Element.

For some plant species (*e.g.*, those with long-term seed dormancy or other dormant stages), very dynamic communities, and migratory animal species, persistence is often defined by real or apparent recurrence. This recurrence may be due to return migrations, periodic disturbance, or fluctuating environmental conditions. For aerial migrants during their migration, the designation of an EO requires temporary (*e.g.*, a week or more) presence in a given season, significant aggregation, and likely recurrence in different years.

B2 Ephemeral Presence

Evidence of likely ephemeral presence of an Element should not result in the designation of an EO. Habitat occupied in an ephemeral, irregular, transitory, or dispersed manner that does not routinely or irreplaceably contribute to the survival or persistence of an Element at that location lacks conservation value and should not be designated as an EO. Typically, this will be the case for dispersing large mammals, or dispersed long-distance migrants (often assigned an “NZN” or “SZN” Element rank for “zero EOs” in a given jurisdiction).

⁵²Appendix B1 also appears above as Section 2.5, Persistence and Practical Conservation Value, and is repeated here for reference.

Examples:

- Large mammals pass through numerous areas as they disperse; if other routes are just as likely to be utilized in the future, the locations fail to contribute routinely to persistence of the Element and should not be considered EOs.
- Areas used ephemerally or irregularly by relatively low numbers of individuals during long-distance migration should not be considered EOs, since the presence of the Element at a particular time does not indicate persistence of the Element at that specific location, nor does it have particular conservation value for that Element.

B3 Recurrence

In some cases, evidence of ephemeral presence of an Element may establish practical conservation value of a location due to recurrence. In other words, any periodicity of an Element (*i.e.*, recurring presence of the Element at a location, usually in relatively large numbers, either due to migratory behaviors, environmental factors, or intermittent dormancy) should be considered in defining persistence.

Examples:

- Despite occupation for ephemeral periods of time, a significant annual migratory concentration area for shorebirds (*e.g.*, >1000 individuals for some species; see Element-specific EO specifications) should be designated an EO since the location has practical conservation value, ensuring the successful migration and continued survival of the species.
- Seed-banking annual plants are often dependent on specific environmental conditions, which may not appear for numerous years. Examples are desert annuals dependent on moisture, or coastal plain pond annuals (such as *Rhexia aristosa*) dependent on drawdown of the water table and exposure of the substrate at a particular season. Note that these plants actually permanently occupy the site; it is only their aboveground appearance that is recurrent, with intervening periods where they may be present exclusively as propagules.
- Many grassland bird species breed only in prairie grasslands of a certain height or density (a short-term cyclic phenomenon, probably originally driven by fire, drought, bison, and prairie dogs). *Ammodramus bairdii* (Baird's sparrow) may only breed at a location for a year or two, and then not reappear for perhaps a decade; however, previously occupied breeding locations not currently in use should be considered EOs to ensure protection of adequate areas for breeding.
- Some communities are of short duration at a given point in a landscape, but are consistently present within the landscape as a result of establishment by disturbance (such as fire or flooding). Aspen forests in a fire landscape, point bar willow communities, and jack pine forests are pertinent examples. Within an area (determined for the Element), shifting patches of a given community could be considered an EO, even though the existence of any given patch (polygon) may be predictably short.

- In some parts of their range, *Loxia leucoptera* (white-winged crossbills) require large crops of spruce cones to successfully breed. Although these seed crops and their associated crossbills may only re-occur every few years, these locations should be considered EOs.

B4 Recurrence Without Survival

The recurrent presence of an Element at a particular breeding location where it is unable to survive has little or no conservation value, and should not be considered an EO.

Examples:

- Some butterflies successfully breed over large areas at the far northern edge of their range during the summer. These populations should not be considered EOs if there is no known return southward migration and any overwintering stages perish due to frost, so that the progeny never survive to contribute to future generations. As a result, the habitat is repopulated, sometimes annually, through immigration. These habitats should not be considered EOs for such Elements.
- Some plants regularly disperse long distances, but fail to survive and reproduce because of unsuitable conditions (*e.g.*, climate). Red mangrove (*Rhizophora mangle*) or coconut (*Cocos nucifera*) propagules regularly reach temperate shores, but cannot survive and reproduce. Such short-term localities should not be considered EOs.

B5 Presence Without Reproduction

An Element at a location without evidence of successful reproduction may have conservation value as a potential source for continued survival of the Element, and thus could be considered an EO.

Examples:

- The last known individuals of the white wartyback (mussel), *Plethobasus cicatricosus*, exist as an old, nonreproducing “population” living in the cold tailwaters (too cold to support their host fishes) resulting from hypolimnetic dam discharges. Such populations should be tracked as EOs as they represent the last known populations and last hope for recovering the species (*e.g.*, should conditions improve).
- Due to fragmentation effects (*e.g.*, increased predation and parasitism), birds at some locations may fail to produce offspring most years. Nonetheless, the habitat may rarely contribute individuals to the regional population, or it may serve as habitat for pre-reproductive birds, or it may potentially be restored, or the causes of reproductive failure could lessen. Such locations could be tracked as EOs.

B6 Persistence in a Landscape Context

Some Elements, including short-lived species, transient communities, and their dependent species, are unable to persist at exactly the same site for extended periods of time. However, these Elements do remain present within the larger landscape in shifting patterns. For such Elements,

persistence, and therefore determination of occurrences, should be judged within a temporal and landscape context (see Section 4.3.2.5[d], Temporal Patterns of Occurrence).

Example:

- Some communities dependent on fire processes having short return intervals may shift in location. For example, in some areas, *Pinus banksiana* (jack pine) and *Picea mariana* (black spruce) forest types have fire regimes where crown fires or high-intensity surface fires kill most or all trees over large areas. Typical return intervals for some stands are in the range of 40-100 years, but some stands may re-burn and reproduce only 15-20 years after a fire, while others may not recur for 200 years or more (Heinselman 1996). A large principal EO comprised of a shifting mosaic of stands can be defined within the landscape; fires may alter the shifting patchwork but may not significantly change the boundaries of the principal EO.