Conservation Measures for Impacts to Migratory Birds Resulting From Transportation Activities

HABITAT REMOVAL, LOSS OF ACTIVE NESTS 2

Construction activities 2

Wildfire 3

DEGREDATION OF HABITAT 4

Invasive plant species 4

Increased access to off-road vehicle and other illegal uses 4

INCREASED MORTALITY 5

Vehicles on bridges across drainages and bays 5

Construction activity on bridges or overpasses 5

Night lighting during construction 5

Vehicle impacts 6

Roadside weed abatement 6

Stressor:

HABITAT REMOVAL, LOSS OF ACTIVE NESTS

Source of stressor:

Construction activities

Note: Breeding season may vary by region

Conservation measures:

CM1: All vegetation within the proposed grading limits will be cleared outside of the bird breeding season for most birds.

CM2: To the maximum extent practicable, all vegetation clearing, grading, and construction activities will occur outside of the bird breeding season for most birds. If it is necessary to conduct these activities during the breeding season, then a minimum of three surveys for nesting and breeding birds will be conducted at four to five-day intervals during the two-week period before these activities begin/continue during the breeding season. If nest(s) or breeding behavior (courtship, nest building, territorial defense, etc.) are detected during these surveys, no vegetation clearing, grading, or construction activities will be allowed within 100 feet of the nest(s). If no nests are identified or believed to be present, but breeding behavior is observed in or near the project area, surveys will occur every other day until either a pair bond is created and nesting activities ensue or breeding behavior is no longer present and the individual/pair has left the project area.

If project activities continue to affect nesting birds in a manner that could be detrimental to their survival or reproductive success, additional actions, such as an increase in buffer width, will be undertaken. Vegetation clearing, grading, and construction activities may resume when nesting activity and fledglings are no longer in the area.

CM3: A qualified biologist will be onsite to serve as a biological monitor during vegetation clearing, grading, and construction activities for the project to ensure no take of migratory birds occurs. Prior to vegetation clearing or disturbance, the monitor will ensure that the limits of construction have been properly staked and are readily identifiable. Any associated project activities that are inconsistent with the proposed conservation measures, and activities that may result in the unanticipated take of migratory birds will be immediately halted and reported to the appropriate FWS office within 24 hours.

CM4: Avoid planting “desirable” fruited or preferred nesting vegetation in medians or Right of Ways.

Source of stressor:

Wildfire

Note: One of the greatest impacts to migratory birds comes from wildfire, which can ignite at the roadside and move into natural areas, resulting in temporal loss and often long-term degradation (due to type conversion/nitrogen deposition/invasives) of natural areas. It is difficult to address this problem because there is a trade-off between creating an impervious fire-safe zone adjacent to the roadside that will help to prevent the ignition of roadside fires, and the increase of the road footprint.

Conservation measure:

CM1: Plant temporary impact areas that are adjacent to natural habitat areas, will not require frequent maintenance, and are located within 100 feet of the road with a palate of low-growing, sparse, fire resistant native species that meet with the approval of the County Fire Department and local FWS Office.

Stressor:
DEGREDATION OF HABITAT

Source of stressor:
Invasive plant species

Note: Invasive plant species vary by region

Conservation measure:
CM1: Avoid planting invasive plant species and remove invasive/exotic species that pose an attractive nuisance to migratory birds.

Source of stressor:
Increased access to off-road vehicle and other illegal uses
Notes: To reduce ORV use without being prohibitively expensive, construct a 3-strand fence with the top two strands each being a double strand smooth wire, and the bottom strand being a ½ inch cable wire that is more difficult to cut. Appropriate barriers may vary depending on illegal uses and wildlife connectivity issues in the area.

Conservation measure:
CM1: Access to natural areas adjacent to the proposed project site will be restricted via the erection of a barrier (e.g., gate, fence, wall) to minimize off-road vehicle and other illegal uses.

Stressor:
INCREASED MORTALITY

Source of stressor:
Vehicles on bridges across drainages and bays
(riparian birds, terns, gulls, etc. particularly impacted)

Conservation measure:
CM1: Bridges crossing areas with adjacent riparian, beach, estuary, or other bird habitat will be topped with metal bridge poles (Sebastian Poles) or other similar structures that extend to the height of the tallest vehicles that will use the structure. See: https://www.environment.fhwa.dot.gov/wvctraining/mod5/module_5_9.asp

Source of stressor:
Construction activity on bridges or overpasses

Note: These measures are used to prevent nesting after construction begins

Conservation measures:
CM1: Cover or enclose all potential nesting surfaces on the structure with mesh netting, chicken wire fencing, or other suitable material to prevent birds from establishing new nests. The netting, fencing, or other material must have no opening or mesh size greater than 19 mm and must be maintained until the structure is removed.

CM2: Apply a non-toxic, non-lethal bird repellent gel or liquid (Bird-Proof from Bird-X Inc. Chicago, IL, www.bird-x.com, or equivalent) on all potential nesting surfaces on the structure in accordance with the manufacturer's instructions. Reapply the repellant as needed to maintain adequate coverage to prevent new nests from being established

Source of stressor:
Night lighting during construction
(insect-catchers including caprimulgids and barn owls particularly impacted)

Conservation measures:
CM1: Lighting resulting from the project will be shielded and directed away from adjacent native habitats. To the maximum extent practicable, while allowing for public safety, low intensity energy saving lighting (e.g. low pressure sodium lamps) will be used.

CM2: To the maximum extent practicable, construction activities will be limited to the time between dawn and dusk to avoid the illumination of adjacent habitat areas. Any necessary construction lighting will be shielded and directed away from adjacent native

habitats (use a 'Cobra' style light rather than an omnidirectional light system to direct light down to the roadbed).

Source of stressor:
Vehicle impacts

Note: Shyh-Chyang "Mitchell" Lin of the National Kinmen Institute of Technology presented data to support this measure at ICOET 2005, but to my knowledge it has not been published yet. This measure also helps reduce noise. However impacts to wildlife connectivity for land-bound fauna should be taken into account as well.

Conservation measures:

CM1: Where feasible, the road will be lowered, or recessed into the ground, to the depth of the tallest vehicles that will use the road, rather than elevated.

CM2: Install wildlife friendly culverts so rodents and small mammals can travel under the roadways instead of over them. This may help reduce raptor deaths associated with being struck while tracking prey or road kill on the roadway.

Source of stressor:
Roadside weed abatement

Conservation measure:

CM1: Prepare a roadside maintenance plan that will define areas where future weed abatement will be required, and to the maximum extent practicable, schedule regular maintenance such that it is conducted outside of the bird breeding season. In areas where regular maintenance will be required, plant non-native landscaping plants that are non-invasive and fire resistant and will not attract native birds.