TARGET HABITAT SCORING JUSTIFICATION CHECKLIST

Step 1 (Credit Scoring) of the Wildlife Connectivity Advance Mitigation Guidelines (Guidelines) require sponsors to submit a justification to support their Target Habitat Scoring Sheet scores, as part of the wildlife connectivity action credit proposal. The sponsor shall justify their Target Species Scoring Sheet scores by providing CDFW with the information in this Target Species Scoring Justification Checklist. This checklist contains all the justification items in Section 5: Target Habitat Ecological Benefit Crediting Considerations of the Guidelines. See the Wildlife Connectivity Action Bank Checklist or the Wildlife Connectivity Action MCA Checklist for more information about when the wildlife connectivity action credit proposal is needed within the bank or MCA process.

The sponsor must use the best available science for the scoring justification including, but not limited to, monitoring data collected or obtained by the sponsor, peer-reviewed literature, pre-existing citable publicly available datasets, and reports from government agencies and universities. If the sponsor believes a specific crediting consideration element is not applicable to the proposed wildlife connectivity action, the sponsor should provide justification for why it is inapplicable.

This checklist is a part of the Guidelines.

*** The sponsor must submit a separate scoring justification for each target habitat.**

CHECKLIST

Section 5.1 Ecological Engineered Design

1. The sponsor shall provide CDFW with a full set of engineered design plans that include, but are not limited to:

    ☐ Existing conditions;

    ☐ Wildlife connectivity structure dimensions and a written description of how these structure dimensions allow for the movement of the target habitat;

    ☐ Wildlife connectivity action approaches;

    ☐ Engineered drawings in plan, elevation, longitudinal profile and cross-sectional views depicting the 2-, 5-, and 100-year hydraulic events including potential debris flow and how the service life of the design has taken into consideration how each of these events will be increasing due to climate change (if applicable);

- The sponsor should consider including the 500-year floodplain as an indicator of future climate risk; and

☐ Fencing or other directional implements (if applicable).

2. The sponsor shall also provide CDFW with a written description of the proposed ecological engineered design. The description must include, at minimum, information on the following components:

☐ Structure Dimensions;

☐ Surface Substrates, Vegetation and Hydrogeomorphic Components;

☐ Approaches; and

☐ Designing for Resilience to Climate Change.

5.1.1 Structure Dimensions

3. The sponsor shall provide CDFW with a written description of how the wildlife connectivity structure dimensions could facilitate successful crossings for native species and enhance movement in general for wildlife that use the target habitat. The description must include at minimum:

☐ The crossing width, length, and height (if applicable);

☐ The openness ratio (calculated in meters) for underpasses, and its suitability for native species. The openness ratio is defined as the structure's (width x vertical clearance) / length.;

☐ If there are turns in the crossing, justify why; and

☐ Whether there is a direct line-of-sight and justification if not.

5.1.2 Noise and Light Minimization Measures

4. The sponsor shall provide CDFW with a written description of how the design minimizes the intensity of noise and light coming from the built infrastructure (e.g., road), traffic, or the wildlife connectivity structure itself. The description must include at minimum:

☐ Baseline noise and light conditions; and

☐ Designs implemented to account for noise and light minimization measures to encourage use by the target species.

5.1.3 Surface Substrates and Vegetation

5. The sponsor shall provide CDFW with a written description of and plan for the vegetation and surface substrates used in the design. The description must include at minimum:

☐ The vegetation used for the plan;

- Proposed vegetation plantings by type and quantity;
- How the proposed vegetation is appropriate for the target habitat, including vegetation within or on top of the structure, as well as both sides of the approach to the wildlife connectivity structure;
- When vegetation may not be feasible for underpasses or other shaded structures, the description should focus on items B-D below;

☐ The soil substrates imported materials used for the design to mimic natural conditions;

☐ A rationale if the substrates are not sourced from the project area; and

☐ A list of the appropriate escape and resting cover elements (e.g., large woody debris, rocks) in the design to enhance movement in general for wildlife that use the target habitat.

The written description for aquatic wildlife connectivity actions must include:

☐ How the design simulates characteristics of the natural stream system, providing ecological continuity based on the upstream and downstream structural complexity (e.g., logs, rocks, pools, riffles, moisture regime);
☐ A discussion on the flexibility and resilience of the proposed streambed and streambank substrates based on hydraulic and geomorphic principles.
☐ An analysis of the existing hydrogeomorphology of the wildlife connectivity action's site and the adjacent up- and downstream sections;
☐ How the wildlife connectivity action is designed to connect the hydraulic and geomorphic processes; and
☐ How the design accounts for how the sheet flow, grade, velocity, water depth, and flow capacity over a range of flow events might affect the target habitat's function.

The written description for aquatic wildlife connectivity actions, as applicable, must include:

☐ Data on floodplains and elevated benches that would allow for terrestrial species crossings during flood events; and
☐ How terrestrial species movement needs, in addition to aquatic species, have been incorporated into the design.

5.1.4 Designing for Resilience to Climate Change

6. The sponsor shall provide CDFW with a written description of how the wildlife connectivity action has been designed to account for future climate conditions. The description must include at minimum:

- ☐ How the wildlife connectivity action has been designed for longevity considering the potential for flooding and wildfire; and
- ☐ How the vegetation in the design is climate resilient.

Section 5.2 Value of the Habitat Connected

5.2.1 Maps

7. The sponsor shall include maps containing the information listed below. If access to properties is infeasible, the sponsor should use public data to provide the following information:
   - ☐ Coordinates (latitude/longitude in decimal degrees) of the proposed wildlife connectivity action;
   - ☐ Boundary of the wildlife connectivity action (See wildlife connectivity action definition in Section 1.4 of the Guidelines);
   - ☐ The surrounding lands connected by the wildlife connectivity action; and
   - ☐ Labels identifying existing and proposed protection mechanism(s) for the surrounding lands connected by the wildlife connectivity action. The existing protection mechanism(s) labeled on the map shall be the current protection mechanism(s) at the time of the sponsor's map submission. Examples of protection mechanisms include, but are not limited, to conservation easements; federal, state, local public agency, non-profit, or special district owned lands protected for fish, wildlife, or habitat; deed restrictions that restrict development or construction; open space; parks; and if parcels are associated with easements (See RCIS Guidelines section 4.3.4.3 for resources on protected areas).;
   - ☐ Labels identifying existing and proposed city or county zoning of the surrounding lands connected by the wildlife connectivity action. Existing zoning shall identify the zoning designation at the time of the sponsor's map submission. Examples of city and county zoning include but are not limited to industrial, open space, parks; green space, recreational, commercial, agricultural, single-family residential, multiunit residential, and schools;
   - ☐ Locations of all aquatic resource features (e.g., ephemeral creeks, ponds, swales, wetlands, etc.) in the surrounding lands connected by the wildlife connectivity action. If the proposed wildlife connectivity action is connecting aquatic resources or removing aquatic barriers, maps showing the benefit of the action to the whole watershed would be appropriate;
   - ☐ Target habitat in the surrounding lands connected by the wildlife connectivity action. Use publicly available resources and/or aerial imagery;
   - ☐ Location of known built infrastructure, natural or man-made hazards, and barriers to species dispersal in the surrounding lands;

- ☐ A map showing the California Natural Diversity Database (CNDDB) records (or other appropriate dataset of species distribution or occurrence) within the surrounding lands.; and
- ☐ A habitat suitability map, if available, such as the California Habitat Relationships (CWHR) Predicted Habitat Models or other scientific source.

5.2.2 Tables

8. The sponsor shall include table(s) containing the information listed below.
   - ☐ Land ownership (if privately owned, indicate "private") in the surrounding lands wildlife connectivity action;
   - ☐ Total habitat acreage and, if applicable, total acreage of aquatic resources by type (e.g., pond, wetland, watercourse, etc.) and linear feet of stream in the surrounding lands. Acreages shall be separated by existing and proposed protection mechanisms and city and county zoning; and
   - ☐ Existing habitat types in the surrounding lands. Existing habitat types shall identify the habitat types present at the time of the sponsor's table submission. When identifying habitat types, the sponsor should consider using scientific literature, aerial or satellite imagery, LiDAR (Light Detection and Ranging), Vegetation Classification and Mapping Program vegetation maps, or other resources to determine which habitat types occur beyond the bank or MCA if physical access to the sites are infeasible.

5.2.3 Written Description

9. The sponsor shall include a written description containing the information listed below.
   - ☐ Known quality of habitat in the surrounding lands. The description must include at minimum, as applicable:
     - General condition of the vegetation and habitat features (streams, ponds, woody cover, etc.) including a list of native species, vegetation type, size, landscape structure, and vegetation density;
     - Ability of the habitat to support native species. Include known or existing supporting documentation, surveys, and/or scientific studies;
     - Extent of known degradation of vegetation and habitat features (e.g., construction, built infrastructure, human usage, roads, trails, presence of invasive species, etc.) within the surrounding lands that are connected by the wildlife connectivity action, if applicable;
   - ☐ Known future construction projects, including county/state regional transportation plans and country general plans, that may impact the area (If the project is an MCA, sponsors can consult the RCIS for this information).;

- ☐ Known future restoration projects that would benefit the target habitat.;
- ☐ Known hydroperiod and water quality (see BIOS datasets 232-234 for U.S. EPA's impaired waters) of aquatic resource features;
- ☐ Vulnerability of target habitat to climate change including whether the target habitat type is projected to experience changes in inundation, fire regimes, temperature, hydroperiod, water quality, or vegetation quality;
- ☐ What native species are known to use the target habitat in the surrounding lands. The information must include at minimum:
    - All presence information for native species, such as scientific literature, research, biological surveys, CNDDB, etc., that identifies use of the target-habitat.

Section 5.3 Value of the Particular Location

5.3.1 Topography

10. The sponsor shall provide CDFW with a written description of how the existing topography of the proposed wildlife connectivity action location meets the suitability of the native species' needs in the wildlife connectivity action credit proposal. A site that does not currently have topographic relief that is considered suitable may still be considered if the sponsor is able to add or remove substrate or implement other topographical modifications (e.g., rock weirs, roughened channels), to make the site's topography suitable for native species. The description must include at minimum:
    - ☐ The wildlife connectivity action site's current slope gradient and topographic barriers and how those are proposed to change based on the wildlife connectivity action;
    - ☐ A description of the likelihood for native species to navigate through the wildlife connectivity structure based on the topography-related cues that native species are likely to rely on, including but not limited to line-of-sight, noise, light, etc. (also see Section 5.1: Ecological Engineered Design of the Guidelines); and
    - ☐ A description of any proposed topography changes with an explanation of the ecological need for the changes. The description should reference the construction plan.

5.3.2 Existing Vegetation and Other Cover

11. The sponsor shall provide CDFW with a written description of native species needs, or lack of need, for cover and how the vegetation cover in this particular location was considered based on the habitat. The description must include at minimum:
    - ☐ The existing wildlife connectivity action site's vegetation (or other) cover conditions and how it currently meets native species' needs.

5.3.3 Human Impacts

12. The sponsor shall provide CDFW with a written description of the human impacts in the particular location. The description must include at minimum:
    - ☐ A list of all human impacts in the area that could impact the success of the wildlife connectivity action, such as distance to urban edge, human population density, recreation, trails, trespass in the area, etc.;
    - ☐ For working lands (e.g., rangeland, agriculture), provide an assessment of potential negative impacts, if any, to the native species; and
    - ☐ Any measures that will be used to ensure that the wildlife connectivity action remains for wildlife use only. Including, but not limited to how the wildlife connectivity action design includes elements that prevent unauthorized human use or trespass while allowing wildlife use.

Section 5.4 Critical Linkages

5.4.1 Regional Connectivity

13. The sponsor shall provide CDFW with a written description of the regional connectivity for the proposed wildlife connectivity action. The description must include at minimum, if available:
    - ☐ The ACE terrestrial connectivity rank for the proposed wildlife connectivity action's site;
    - ☐ Any regional linkage systems (using the BIOS Habitat Connectivity Viewer) that the proposed wildlife connectivity action's site is within;
    - ☐ If the proposed wildlife connectivity action's site is within federally designated critical habitat; and
    - ☐ List of regional conservation plans that reference the proposed wildlife connectivity action's site.

Section 3.2.2.2 Unique Project Characteristics

14. The sponsor can provide a description of any unique project characteristics for the proposed wildlife connectivity action that are not captured in the other crediting considerations listed above for the target habitat.

Section 3.2.3 Credit Factor (only during pilot period)

15. The sponsor shall propose a crediting factor and credit amounts for the target habitat with a clear written justification as to why the crediting factor was chosen. The justification should be based on the best available information.