

**THE BCCP Status of Flint Ridge Cave**  
**Prepared for the BCCP Coordinating Committee**  
**William A. Conrad, Coordinating Committee Secretary**  
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The federal permit that the City and County share, and the BCCP Habitat Conservation Plan (HCP) protect Flint Ridge Cave (FRC) as mitigation for two species of concern. As mitigation, the cave is set aside and protected so that other habitat elsewhere might be lost without compromising these species' chance of survival. Species of concern are not listed as endangered or threatened, nor are they necessarily candidates for listing, although they could attain this status sometime in the future. This BCCP protection establishes "No Surprises" coverage by protecting the cave as mitigation for these species. This means that if the species are eventually listed then the permit holders, in this case the City and County, will not have to take additional actions to protect the species in order to be authorized incidental take when they maintain the conditions in the original permit. The species in FRC are:

*Cicurena bandida* (formerly *C. cueva*)  
*Rhadine austinica*

There are also two rare species that have been encountered during monitoring. They have some potential to be elevated to Species of Concern. However, they do not have any formal protection. They are:

*Speodensus* N.S.  
*Eidmannella* N.S.

The No Surprises protection is primarily gained through compliance with condition R3 of our federal permit. It requires us to protect the surface and subsurface drainage basins for caves used as mitigation (the 62 caves where protection is required). FRC is one of these caves.

Troglobitic species (certain cave dwelling insects) like the ones in FRC rely on contributions of water and organic materials into caves from the surface to support their lifestyles. Surface drainage basins are the areas that provide runoff directly to the cave via its surface opening or entrance. The surface drainage basin for FRC has been delineated by topographic surveys and encompasses 55 acres.

Subsurface drainage basins are more discrete. They are the areas where water percolates through the soil, finds its way to subsurface features such as faults or cracks, or small features that are opened by limestone dissolving. Evidence of subsurface contributions into caves is often expressed by drips, trickles of water, or in some cases much more substantial flow. For FRC this basin is more than 100 acres.

The basins for FRC are well defined and documented. The current designated ROW for SH 45 bisects both the surface and the subsurface basin and crosses the cave footprint.

Condition R2 of the permit also provides that permittees can propose to USFWS to substitute a new cave for ones protected under the permit. While the permit does not define when this should occur, situations when the caves' basins cannot be adequately protected have been assumed to be the appropriate reason for this action. The substitute cave must contain "significant troglabitic fauna", as determined by the applicants, the service, and karst experts.

There is no process described in the permit of HCP for accomplishing this. It is unclear whether this would amount to an administrative action or a permit amendment. This might be applicable to FRC as a way to allow for a major disturbance in its protected area, such as SH45.

While not related to BCCP, FRC is also a major recharge feature serving Barton Springs. Travel times from the cave entrance to the springs are documented through dye tracing studies to be as fast as three days. I have included a short video of a significant recharge event at FRC in 2004. It depicts recharge occurring within an hour after a rainfall event where two inches fell in one hour. The flow was measured by the monitoring equipment visible in the video as 16 cubic feet per second or 7100 gallons per minute. What is notable is the water quality of the flows entering the cave after the intense storm event. Note how rocks and vegetation are clearly visible below the surface of the runoff.