

**Risks of Glyphosate Use to Federally Threatened
California Red-legged Frog**
(Rana aurora draytonii)

Pesticide Effects Determination

**Environmental Fate and Effects Division
Office of Pesticide Programs
Washington, D.C. 20460**

October 17, 2008

Table 1.4 Glyphosate Use-specific Indirect Effects Determinations¹ Based on Effects to Prey

Use(s)	Algae	Aquatic Invertebrates		Terrestrial Invertebrates (Acute)	Aquatic-phase frogs and fish		Terrestrial-phase frogs		Small Mammals	
		Acute	Chronic		Acute	Chronic	Acute	Chronic	Acute	Chronic
Forestry, areas with impervious surfaces and rights of way (application rates of 7.5 lb a.e./A and above)	NE	NE	NE	LAA	NE	NE	NE	LAA	NE	LAA
One particular formulation (Reg No. 524-424): industrial sites, rights-of-way, ornamental lawns and turf at 1.1 to 5.5 lbs formulation/A.	NA	NA	NA	LAA	NA	NA	LAA	NA	NLAA	NA
Most crops, forestry, rights of way and areas with impervious surfaces at application rates of 3.84 lbs a.e./A and above.	NE	NE	NE	LAA	NE	NE	NE	NE	NE	LAA
Aquatic uses at 3.75 lb a.e./A	LAA	NE	NE	NE	NE	NE	NE	NE	NE	NE

¹ NE = No effect; NLAA = May affect, not likely to adversely affect; LAA = Likely to adversely affect; NA = data not available for this formulation.

Table 2.1. Multiple Active-Ingredient Formulations for Glyphosate

REG_NR	PROD_NAME	Percent (%) Active Ingredient							
		2,4-D	Dicamba	Diquat dibromide	Glyphosate	Imazethapyr	Oxyfluorfen	S-Metolachlor	Sulfuric acid, monourea adduct
00010001179	TOUCHDOWN DIQUAT HOME AND GARDEN CONCENTRATE			0.73	13.4				
00010001180	TOUCHDOWN DIQUAT HOME AND GARDEN READY TO USE			0.06	0.81				
00010001185	SEQUENCE HERBICIDE				21.8			29	
00010001186	TOUCHDOWN 008		0.6		43.5				
00023902694	ORTHO SEASON-LONG GRASS & WEED KILLER			0.1	8		1.5		
00024100404	STANDOUT HERBICIDE				21.9	2.7			
00035200675	ETK-2301 HERBICIDE				9.6				
00968800211	CHEMSICO HERBICIDE CONCENTRATE DT			1.9	14.6				
00968800213	CHEMSICO HERBICIDE RTU DT			0.1	0.81				
07136800030	NUFARM GLYKAMBA BROADSPECTRUM HERBICIDE		4.1		23.3				
07136800035	RECOIL BROAD SPECTRUM HERBICIDE	11.38			23.03				

**Table 2.7. Total Amount of Glyphosate Active Ingredients (lbs a.i.) Applied in California from 1999-2006
(Source: CDPR PUR)**

Active Ingredient	Total Pounds Applied in California							
	1999	2000	2001	2002	2003	2004	2005	2006
GLYPHOSATE	30	843	55,486	157,014	116,168	113,383	307,172	523,482
GLYPHOSATE, DIAMMONIUM SALT	0	0	46	59,865	127,636	150,813	141,093	101,340
GLYPHOSATE, ISOPROPYLAMINE SALT	4,300,644	4,639,986	4,406,668	5,027,361	5,618,418	5,803,284	4,590,548	4,781,541
GLYPHOSATE, MONOAMMONIUM SALT	28,298	5,608	1,211	1,173	199,208	151,703	81,283	86,388
GLYPHOSATE, POTASSIUM SALT	0	0	0	0	79	95,034	1,861,410	2,247,232
GLYPHOSATE- TRIMESIUM	91,772	194,849	146,562	146,941	58,913	48,520	25,502	13,384
TOTAL	4,420,744	4,841,286	4,609,973	5,392,354	6,120,422	6,362,738	7,007,008	7,753,367

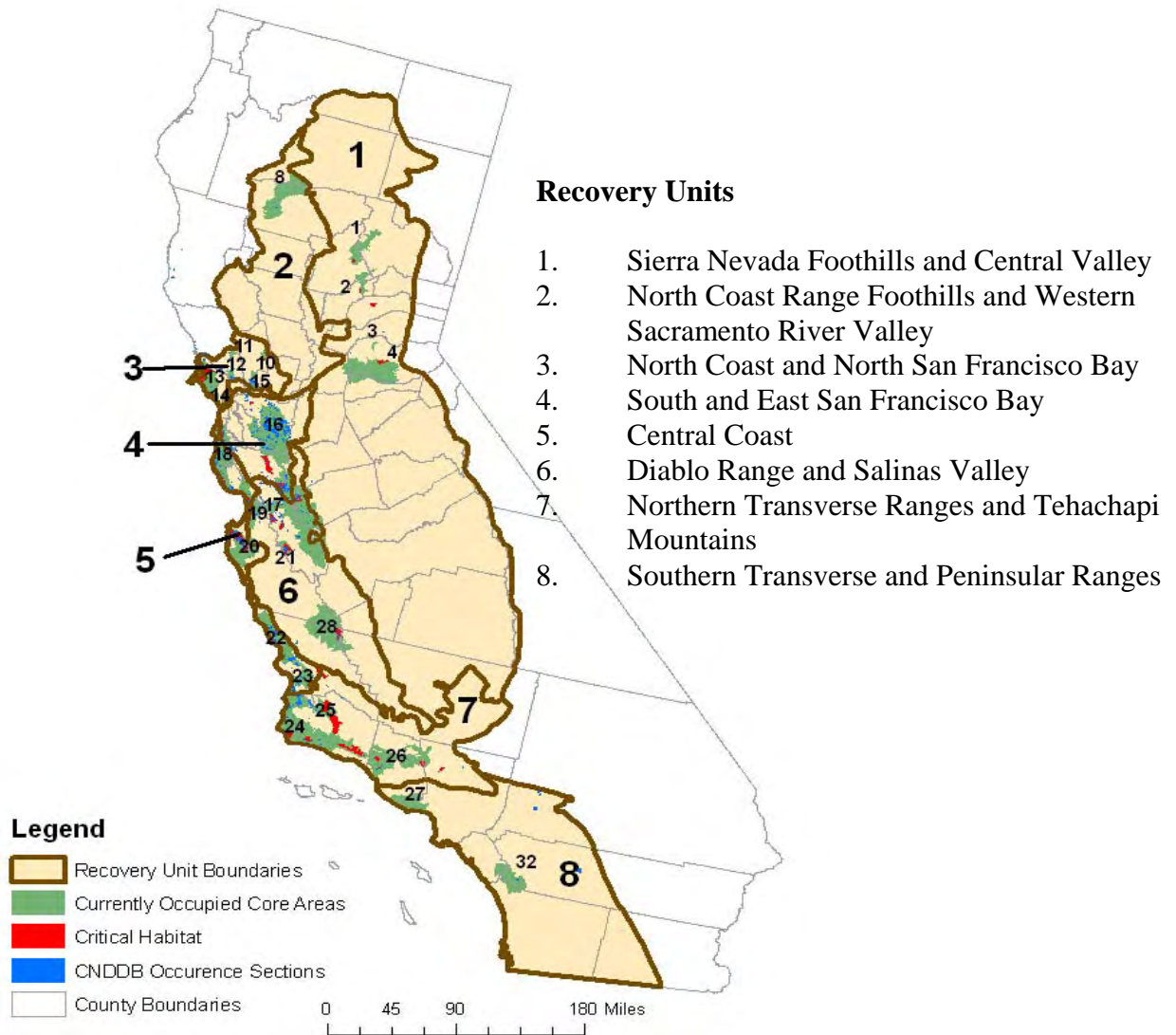


Figure 2.2 Recovery Unit, Core Area, Critical Habitat, and Occurrence Designations for CRLF

Core Areas

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|-----------------------------------------------------|-----------------------------------------------|
| 1. Feather River | 20. Carmel River – Santa Lucia |
| 2. Yuba River- S. Fork Feather River | 21. Gablan Range |
| 3. Traverse Creek/ Middle Fork/ American R. Rubicon | 22. Estero Bay |
| 4. Cosumnes River | 23. Arroyo Grange River |
| 5. South Fork Calaveras River* | 24. Santa Maria River – Santa Ynez River |
| 6. Tuolumne River* | 25. Sisquoc River |
| 7. Piney Creek* | 26. Ventura River – Santa Clara River |
| 8. Cottonwood Creek | 27. Santa Monica Bay – Venura Coastal Streams |
| 9. Putah Creek – Cache Creek* | 28. Estrella River |
| 10. Lake Berryessa Tributaries | 29. San Gabriel Mountain* |
| 11. Upper Sonoma Creek | 30. Forks of the Mojave* |
| 12. Petaluma Creek – Sonoma Creek | 31. Santa Ana Mountain* |
| 13. Pt. Reyes Peninsula | 32. Santa Rosa Plateau |
| 14. Belvedere Lagoon | 33. San Luis Ray* |
| 15. Jameson Canyon – Lower Napa River | 34. Sweetwater* |
| 16. East San Francisco Bay | 35. Laguna Mountain* |
| 17. Santa Clara Valley | |
| 18. South San Francisco Bay | |
| 19. Watsonville Slough-Elkhorn Slough | |

* Core areas that were historically occupied by the California red-legged frog are not included in the map

