



# **LIVE OAK ASSOCIATES, INC.**

an Ecological Consulting Firm

## **CINNABAR HILLS GOLF CLUB CALIFORNIA TIGER SALAMANDER 2005/2006 MITIGATION MONITORING**

Prepared by

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## 1.0 INTRODUCTION

The Cinnabar Hills Golf Club, a 27-hole golf course, is located on a 347-acre parcel southeast of Calero Reservoir in south San Jose, Santa Clara County, California (Figure 1). The golf course was developed and is currently operated by the Cinnabar Hills Golf Club. Upon completion of the Environmental Impact Report (EIR) for the golf course project, the City of San Jose approved the proposed project on 25 September 1996. The U.S. Army Corps of Engineers (USACE) authorized the project under Nationwide Permit 26 on 10 October 1996. The California Department of Fish and Game (CDFG) subsequently entered into a Streambed Alteration Agreement (“SAA” or “1603 Agreement”) for the project on 1 November 1996 (Notification No. 812-96).

The *Tradition Golf Club Mitigation and Monitoring Plan* (H. T. Harvey & Associates 1996), which was incorporated into the USACE permit and the SAA, describes the design to mitigate for direct and indirect impacts to: 1) riparian habitats specifically within Drainage C, 2) areas under the jurisdiction of the USACE, and 3) California tiger salamanders (*Ambystoma californiense*), a Species of Special Concern listed by the CDFG and a federally threatened species by the U. S. Fish and Wildlife Service (USFWS; Appendix A). The mitigation plan resulted in the translocation of adult California tiger salamanders from aestivation sites in Drainage "C" to three created mitigation ponds (Figure 2; Appendix B). The CDFG allowed translocation of California tiger salamanders only in the first year (December 1996-June 1997) of the mitigation effort.

In addition to the mitigation design, the *Mitigation and Monitoring Plan* outlines a 10-year schedule to monitor mitigation pond quality and translocated California tiger salamander presence/breeding within the mitigation ponds, and defines the success criteria for the mitigations (Appendix B). Previous reports have documented results of Years 1-9 of monitoring at the Cinnabar Hills Golf Course (H. T. Harvey & Associates 1996, 1998, 1999, 2000; Live Oak Associates, Inc. 2001, 2002, 2003, 2004, 2005). The current report provides the results of the monitoring for Year 10 (2005/2006) and summarizes the results of monitoring at the mitigation

ponds (and Santa Clara Valley Water District (SCVWD) pond) from Year 1 (1997), when adult California tiger salamanders were initially translocated to the three mitigation ponds, to Year 10 (2005). As stated in the plan, this is the final year of monitoring for mitigation pond quality and translocated California tiger salamander presence/breeding within the mitigation ponds.

## 2.0 BACKGROUND

The implementation, monitoring, and success criteria of the mitigation measures for impacts to California tiger salamanders at the Cinnabar Hills Golf Club is based on the *Mitigation and Monitoring Plan* as incorporated in the 1603 Agreement (H. T. Harvey & Associates 1996). The mitigation in this plan called for: 1) the preservation and enhancement of the SCVWD pond and aestivation habitat and 2) the creation of three mitigation ponds that total approximately 2.5 acres. During implementation of the mitigation measures (1996/1997), California tiger salamanders were translocated from the impact area (Drainage "C") to the newly created mitigation ponds (Figure 2). As articulated in the plan, "the tiger salamander mitigation for impacts to aestivating salamanders and their habitat associated with Drainage C will be considered a success if larvae/juveniles are detected between May-June in all three ponds in Years 8-10."

### 2.1 MITIGATION MONITORING

As stipulated in the *Mitigation and Monitoring Plan* (H. T. Harvey & Associates 1996), monitoring of the SCVWD pond and the mitigation ponds is to be conducted by a qualified biologist for a 10-year period (Appendix B). The mitigation monitoring is intended to document California tiger salamander breeding in the ponds and provide some measure of breeding success (e.g., number of larvae produced) and dispersing juveniles.

### **3.0 METHODS**

#### **3.1 MONITORING SURVEYS**

The SCVWD pond and the three mitigation ponds were surveyed on 24 February and 28 April 2006 for Year 10, the final year of monitoring. All ponds were visually inspected at night with the use of a flashlight, which assisted in locating salamander larvae near the edges of aquatic habitats. No dip nets or seines were utilized because of the current federally-listed status of this species.

## 4.0 RESULTS

### 4.1 MONITORING SURVEYS

#### SCVWD Pond

A visual inspection of the SCVWD pond during the February and April 2006 surveys resulted in detection of California tiger salamander larvae. Pacific treefrog (*Hyla regilla*) larvae and California toad (*Bufo boreas halophilus*) larvae were also observed. Coast Range newt (*Taricha torosa torosa*; a subspecies of the California newt) larvae were observed during the surveys, and three adult male bullfrogs (*Rana catesbeiana*) were heard calling in the pond. Aquatic invertebrates, including backswimmers (Notonectidae) and clam shrimp (*Cyzicus californicus*), were numerous in the pond.

By mid-summer 2006, the SCVWD pond had completely dried. This pond will remain dry until the first rains of the 2006/2007 wet season, as no supplemental water enters this pond.

#### Mitigation Ponds

California tiger salamander larvae were observed in the upper, middle, and lower mitigation ponds during the February and April 2006 surveys. Salamander larvae appeared to be most abundant (approximately two dozen larvae) in the upper mitigation pond. Pacific treefrog larvae and California toad larvae were also observed. Coast Range newt larvae were observed during the surveys, and two adult bullfrogs were heard calling in the middle mitigation pond. Aquatic invertebrates, including backswimmers and clam shrimp, were numerous in the ponds.

As in previous years, Botta pocket gopher (*Thomomys bottae*) burrows were present in the vicinity of each of the mitigation ponds. These burrows provide suitable aestivation habitat for juvenile and adult salamanders. Because of the extended rainfall season this year, it is presumed that there will be an excellent larval recruitment into the population before the mitigation ponds completely dry up.

By mid-summer 2006, all ponds had completely dried. They will remain dry until the first rains of the 2006/2007 wet season, as no supplemental water enters them during the summer months.

**Table 1: Monitoring results for California tiger salamanders at the Santa Clara Valley Water District pond.**

YEAR	CTS Eggs	CTS Small Larvae	CTS Large Larvae	Amphibian prey <sup>1</sup>	Invertebrate Prey <sup>2</sup>	California Newts	Bullfrogs	Pond Dried	H <sub>2</sub> O Quality	H <sub>2</sub> O Supplemented Pumped	Aestivation Habitat
1997	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Cloudy	No	Ground squirrel and pocket gopher
1998	Yes	No	No	Yes	Yes	Yes	No	Almost Completely	Clear	No	Ground squirrel and pocket gopher
1999	No	No	No	Yes	Yes	Yes	Yes	Almost Completely	Clear	No	Ground squirrel and pocket gopher
2000	No	No	No	Yes	Yes	No	Yes	Almost Completely	Clear	No	Ground squirrel and pocket gopher
2001	No	No	No	Yes	Yes	No	Yes	Yes September	Clear	No	Ground squirrel and pocket gopher
2002	No	Yes	No	Yes	Yes	Yes	No	Yes	Clear	No	Ground squirrel and pocket gopher
2003	NA <sup>3</sup>	Yes	No	Yes	Yes	Yes	Yes	Yes August	Clear	No	Ground squirrel and pocket gopher
2004	NA <sup>3</sup>	Yes	NA <sup>4</sup>	Yes	Yes	No	Yes	Yes Mid-Summer	Clear	No	Ground squirrel and pocket gopher
2005	NA <sup>3</sup>	Yes	NA <sup>4</sup>	Yes	Yes	No	Yes	Yes Mid-Summer	Clear	No	Ground squirrel and pocket gopher
2006	NA <sup>3</sup>	Yes	NA <sup>4</sup>	Yes	Yes	Yes	Yes	Yes July	Clear	No	Pocket gopher

<sup>1</sup> Pacific treefrog, California toad

<sup>2</sup> Conchostraca, Chironomidae, Notonectidae

<sup>3</sup> Egg mass surveys were not conducted

<sup>4</sup> Surveys were done early in the season

**Table 2: Monitoring results at the Cinnabar Hills Golf Course California tiger salamander mitigation ponds.**

	CTS Eggs	CTS Small Larvae	CTS Large Larvae	Amphibian prey <sup>1</sup>	Invertebrate Prey <sup>2</sup>	California Newts	Bullfrogs	Pond Dried	H <sub>2</sub> O Quality	H <sub>2</sub> O Supplemented Pumped	Aestivation Habitat
<b>1997</b>											
Upper pond	Yes	Yes	Yes	Yes	Yes	Yes	No	June	Cloudy	No	Gopher burrows and man-made rock piles
Middle pond	Yes	Yes	Yes	Yes	Yes	Yes	No	October	Cloudy	June	
Lower pond	Yes	Yes	Yes	Yes	Yes	No	Yes	October	Cloudy	June	
<b>1998</b>											
Upper pond	Yes	Yes	Yes	Yes	Yes	Yes	No	June	Cloudy	No	Gopher burrows and man-made rock and brush piles
Middle pond	Yes	Yes	No	Yes	Yes	Yes	No	May	Clear	No	
Lower pond	No	No	No	Yes	Yes	No	No	May	Clear	No	
<b>1999</b>											
Upper pond	No	Yes	No	Yes	Yes	No	No	June	Cloudy	No	Gopher burrows and man-made rock and brush piles
Middle pond	No	Yes	No	Yes	Yes	Yes	Yes	July	Clear	No	
Lower pond	No	No	No	Yes	Yes	Yes	Yes	July	Clear	No	
<b>2000</b>											
Upper pond	No	Yes	Yes	Yes	Yes	No	No	June	Cloudy	No	Gopher burrows and man-made rock and brush piles
Middle pond	No	Yes	No	Yes	Yes	No	Yes	July	Clear	No	
Lower pond	No	Yes	No	Yes	Yes	No	No	July	Clear	No	
<b>2001</b>											
Upper pond	No	Yes	Yes	Yes	Yes	No	No	May	Clear	No	Gopher burrows and man-made rock and brush piles
Middle pond	No	Yes	Yes	Yes	Yes	No	Yes	August	Clear	No	
Lower pond	No	No	No	Yes	Yes	No	No	August	Clear	No	
<b>2002</b>											
Upper pond	NA <sup>3</sup>	No	No	Yes	Yes	No	No	May	Clear	No	Gopher burrows and man-made rock and brush piles
Middle pond	NA <sup>3</sup>	Yes	No	Yes	Yes	No	No	September	Clear	No	
Lower pond	NA <sup>3</sup>	Yes	No	Yes	Yes	No	No	September	Clear	No	
<b>2003</b>											
Upper pond	NA <sup>3</sup>	Yes	No	Yes	Yes	No	No	August	Clear	Yes	Gopher burrows and man-made rock and brush piles
Middle pond	NA <sup>3</sup>	Yes	Yes	Yes	Yes	No	Yes	August	Clear	No	
Lower pond	NA <sup>3</sup>	Yes	Yes	Yes	Yes	No	No	August	Clear	No	

	CTS Eggs	CTS Small Larvae	CTS Large Larvae	Amphibian prey <sup>1</sup>	Invertebrate Prey <sup>2</sup>	California Newts	Bullfrogs	Pond Dried	H <sub>2</sub> O Quality	H <sub>2</sub> O Supplemented Pumped	Aestivation Habitat
<b>2004</b>											
Upper pond	NA <sup>3</sup>	Yes	NA <sup>4</sup>	Yes	Yes	No	No	Mid-Summer	Clear	Yes	Gopher burrows and man-made rock and brush piles
Middle pond	NA <sup>3</sup>	Yes	NA <sup>4</sup>	Yes	Yes	No	Yes	Clear	Clear	No	
Lower pond	NA <sup>3</sup>	Yes	NA <sup>4</sup>	Yes	Yes	No	No	Clear	Clear	No	
<b>2005</b>											
Upper pond	NA <sup>3</sup>	Yes	NA <sup>4</sup>	Yes	Yes	No	No	Mid-Summer	Clear	Yes	Gopher burrows and man-made rock and brush piles
Middle pond	NA <sup>3</sup>	Yes	NA <sup>4</sup>	Yes	Yes	No	Yes	Clear	Clear	No	
Lower pond	NA <sup>3</sup>	Yes	NA <sup>4</sup>	Yes	Yes	No	No	Clear	Clear	No	
<b>2006</b>											
Upper pond	NA <sup>3</sup>	Yes	NA <sup>4</sup>	Yes	Yes	Yes	No	June	Clear	No	Gopher burrows and man-made rock and brush piles
Middle pond	NA <sup>3</sup>	Yes	NA <sup>4</sup>	Yes	Yes	Yes	Yes	August	Clear	No	
Lower pond	NA <sup>3</sup>	Yes	NA <sup>4</sup>	Yes	Yes	Yes	No	August	Clear	No	

<sup>1</sup> Pacific treefrog, California toad

<sup>2</sup> Conchostraca, Chironomidae, Notonectidae

<sup>3</sup> Egg mass surveys were not conducted

<sup>4</sup> Surveys were done early in the season

## 5.0 DISCUSSION

### 5.1 SCVWD POND

In 1996, prior to construction of the golf course, a small population of California tiger salamanders was discovered in the SCVWD pond. The pond supported only a few CTS adults and larvae, along with a relatively large population of bullfrogs. Construction of the golf course began in 1997. In 1997 and 1998, eggs and/or larvae were detected, thus indicating the continued persistence of breeding adult CTS.

However, larvae were not observed again until April 2002, when small numbers of larval CTS were detected during seining efforts; subsequent efforts in June 2003, March 2004, and March 2005, and February and April 2006 also yielded detection of larval CTS. The inability to detect larvae between 1998 and 2002 is believed to be related to the difficulty in seining the densely vegetated pond bottom. Survey efforts from 2003-2006 yielded results similar to those in 1996 and 1997 in that a small population of CTS has continued to breed in this pond. This pond presently supports an adequate prey base for developing larvae, and while the water clarity is currently very high, the pond vegetation may be providing sufficient refuge for CTS that breed in this pond.

A large population of bullfrogs was present in the SCVWD pond before the construction of the golf course. Bullfrogs were detected during the February and April 2006 surveys. While bullfrogs have been detected in this pond every year since 1996 except 2002, their numbers appear lower in recent years. This may be due, in part, to the summer drying of the pond the last few years.

The population of CTS in this pond is believed to have remained relatively constant since the mid-1990s. At no time during sampling efforts were more than a few individuals ever detected. It is unclear if the increased sampling effort, the improving conditions for CTS, or some combination of the both were responsible for detecting CTS in the past four years. We believe that CTS breeding at this pond can be successful for many years to come due to the abundance of prey in the pond, the fact that the pond holds water for a suitable length of time, and the

sufficient aestivation habitat that exists around the pond. We also believe that these conditions will remain favorable into the future. Therefore, the success criterion has been met in Year 10. This is the final year of monitoring for mitigation pond quality and translocated California tiger salamander presence/breeding within the SCVWD pond; therefore, no further mitigation or monitoring action will occur.

## **5.2 MITIGATION PONDS**

Larval CTS have been observed in the three mitigation ponds in all monitoring years to date (i.e., 1997-2006), indicating that regardless of egg detection rates, CTS are breeding successfully in the mitigation ponds. When the ponds are full, food is abundant in each pond, with Pacific treefrogs and California toad larvae (numbering in the hundreds), as well as aquatic invertebrates, present.

As with most pond environments, siltation can erode a pond's ability to support suitable breeding habitat for CTS by shortening the time it holds water. Some level of siltation is occurring to all three ponds, partially due to the dense patches of vegetation, which acts as a foothold for the silt. This siltation reduces the volume and depth of the ponds and may ultimately decrease the length of time the ponds will hold water. If the ponds do not maintain appropriate water levels for a minimum of 3.5 months, CTS will not complete the metamorphosis process. Without management, the ponds will continue to silt in until they are no longer ponds. This problem can be partially solved by grazing during the periods the ponds are dry, which may lessen the amount of pond vegetation. Once the vegetation has been reduced, it may also be necessary to scoop out the accumulated silt to allow the ponds to continue to operate as suitable breeding sites for CTS.

A review of ten years of monitoring indicates that tiger salamanders have remained within close proximity to the mitigation ponds and have bred in all three ponds sometime over the last ten years. The middle pond has supported breeding activity all ten years, while the upper pond supported evidence of breeding for nine of the last ten years, and the lower pond supported evidence of breeding for seven of the last ten years. During the 2006 surveys, CTS larvae were most abundant (i.e., at least two dozen noted) in the upper mitigation pond. Success criteria

require that larvae/juvenile be detected in all three ponds in years 8-10, assuming a normal or above normal rainfall year. Due to the presence of salamander larvae in all three ponds in years 8, 9, and 10, the success criterion has been met according to the *Tradition Golf Club Mitigation and Monitoring Plan* (H. T. Harvey & Associates 1996). Therefore, this is the final year of monitoring for mitigation pond quality and translocated California tiger salamander presence/breeding within the mitigation ponds, and no further mitigation or monitoring action will occur.

### **5.3 RECOMMENDATIONS**

The mitigation ponds and SCVWD pond have met the final success criteria for supporting sustainable CTS populations. While monitoring of these mitigation sites is completed, ongoing maintenance should be continued to ensure that site conditions are adequate for CTS in perpetuity. The following recommendations are offered:

1. To reduce mitigation pond clarity, ensure that livestock access continues around the three mitigation ponds during various periods of the year.
2. Remove bullfrogs from the ponds when observed to prevent possible establishment of a population.
3. The mitigation ponds should remain wet through May. Augment water in the ponds when necessary (e.g., if water levels begin to drop precipitously before May).
4. Be sure to drain the ponds when necessary (e.g., if water is still present in late September or early October).
5. One corner of the upper mitigation pond holds water longer than the rest of the pond. Be sure that this corner dries at some point during the year.

## LITERATURE CITED

- Anderson, P.R. 1968. The reproductive and developmental history of the California tiger salamander. Unpublished M.A. Thesis, Fresno State College, Fresno, California, vii+82 p.
- Austin, C.C., and H.B. Shaffer. 1992. Short-, medium-, and long-term repeatability of locomotor performance in the tiger salamander *Ambystoma californiense*. *Functional Ecology*, 6(2); 145-153.
- Baldwin, K.S., and R.A. Stanford. 1987. Life history notes: *Ambystoma tigrinum californiense* (California tiger salamander). Predation. *Herpetological Review*, 18(2):33.
- Barry, S.J., and H.B. Shaffer. 1994. The status of the California tiger salamander (*Ambystoma californiense*) at Lagunita: a 50-year update. *Journal of Herpetology*, 28(2): 159-164.
- Bowler, J.K. 1977. Longevity of reptiles and amphibians in North American collections as of 1 November 1975. Society for the Study of Amphibians and Reptiles, Miscellaneous Publications, *Herpetological Circular* (6): iv+32 p.
- City of San Jose. 1996. Final environmental impact report for the Tradition Golf Club, application by The Tradition L.L.C., September 26, 1996.
- Feaver, P.E. 1971. Breeding pool selection and larval mortality of three California amphibians: *Ambystoma tigrinum californiense* Gray, *Hyla regilla* Baird and Girard, and *Scaphiopus hammondi* Girard. Unpublished M.A. Thesis, Fresno State College, Fresno, California, vii+58 p.
- Fisher, R.N., and H.B. Shaffer. 1996. The decline of amphibians in California's great Central Valley. *Conservation Biology*, 10(5): 1387-1397.
- H. T. Harvey & Associates. 1996. Tradition Golf Club PD Zoning Environmental Impact Report, Biological Section. Project No. 957-04.
- \_\_\_\_\_. 1996. Tradition Golf Club mitigation and monitoring plan; U.S. Army Corps of Engineers File No. 22241S92, Alviso, California, Project. No. 957-05.
- \_\_\_\_\_. 1998. Tradition Golf Club California Tiger Salamander 1996/1997 Mitigation Monitoring. Project No. 957-03.
- \_\_\_\_\_. 1999. Cinnabar Hills (Tradition) Golf Club California Tiger Salamander 1997/1998 Mitigation Monitoring. Project No. 957-09.
- \_\_\_\_\_. 2000. Tradition Golf Club California Tiger Salamander 1998/1999 Mitigation Monitoring. Project No. 957-10.
- \_\_\_\_\_. 2001. Cinnabar Hills (Tradition) Golf Club California Tiger Salamander 1999/2000 Mitigation Monitoring. Project No. 957-11.

- Pickwell, G. 1947. Amphibians and reptiles of the Pacific states. Stanford University Press, Stanford, California, xiv+236 p
- Shaffer, H.B., R.N. Fisher, and S.E. Stanley. 1993. Status report: the California tiger salamander (*Ambystoma californiense*). Final report to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California, under contract numbers 9422 and 1383. 93 p.
- Snider, A.T., and J.K. Bowler. 1992. Longevity of reptiles and amphibians in North American collections. Second edition. Society for the Study of Amphibians and Reptiles, Miscellaneous Publications, Herpetological Circular (21): iii+40 p.
- Sorensen, P.C. 1994. Endangered and threatened wildlife and plants; 12-month petition finding for the California tiger salamander. Federal Register, 59(74): 18353-18354. [Monday, April 18, 1994].
- Stebbins, R.C. 1951. Amphibians of western North America. University of California Press, Berkeley, California, ix+539 p.
- \_\_\_\_\_. 1972. Amphibians and reptiles of California. California Natural History Guides (31). University of California Press, Berkeley, Los Angeles, and London. 152 p.
- \_\_\_\_\_. 1985. A field guide to western reptiles and amphibians. Second edition, revised. Houghton Mifflin Company, Boston, Massachusetts, xiv+336 p.
- Storer, T.I. 1925. A synopsis of the Amphibia of California. University of California Publications in Zoology, 27:1-342.
- Twitty, V. C. 1941. Data on the life history of *Ambystoma tigrinum californiense* Gray. Copeia, 1941(1): 1- 4.

- Holland, D.C., M.P. Hayes, and E. McMillan. 1990. Late summer movement and mass mortality in the California tiger salamander (*Ambystoma californiense*). *The Southwestern Naturalist*, 35(2): 217-220.
- Jennings, M.R. 1996. Natural history notes: *Ambystoma californiense* (California tiger salamander). Burrowing ability. *Herpetological Review*, 27(4): 194.
- \_\_\_\_\_. 1998. Conservation and biodiversity of amphibians and reptiles along the central California coast. Pages 33-40 In: Nona Chiariello and Raymond V. Dasmann (editors). *Proceedings of the Symposium on Biological Diversity of Central California Coast*. Association for the Golden Gate Biosphere Reserve, University of California, Department of Environmental Science, Policy, and Management: Cooperative Extension Forestry. vii+122p.
- Jennings, M.R., and M.P. Hayes. 1994. Amphibian and reptile species of special concern in California. Final Report to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California, under contract number 8023. iii+225 p.
- Live Oak Associates, Inc. 2001. Cinnabar Hills Golf Club California Tiger Salamander, 2000/2001 Mitigation Monitoring. Project No. 294-01.
- \_\_\_\_\_. 2002. Cinnabar Hills Golf Club California Tiger Salamander, 2001/2002 Mitigation Monitoring. Project No. 294-02.
- \_\_\_\_\_. 2003. Cinnabar Hills Golf Club California Tiger Salamander, 2002/2003 Mitigation Monitoring. Project No. 294-03.
- \_\_\_\_\_. 2004. Cinnabar Hills Golf Club California Tiger Salamander, 2003/2004 Mitigation Monitoring. Project No. 294-04.
- \_\_\_\_\_. 2005. Cinnabar Hills Golf Club California Tiger Salamander, 2004/2005 Mitigation Monitoring. Project No. 294-05.
- Loredo, I., D. Van Vuren, and M. L. Morrison. 1996. Habitat use and migration behavior of the California tiger salamander. *Journal of Herpetology*, 39(2): 282-285.
- Long, M.M. 1992. Endangered and threatened wildlife and plants, 90-day finding, and commencement of status review for a petition to list the California tiger salamander. *Federal Register*, 57(224): 54545-54546. [Thursday. November 19, 1992].
- Myers, G.S. Unpub. M.S. "Amphibians and reptiles of the urban area of Palo Alto and Stanford, California". Unpublished manuscript in the Smithsonian Institution Archives, Record Unit 7317, George Sprague Myers Papers, 1903-1986, and undated, Box 45, File 2.
- Petranka, J.W. 1998. *Salamanders of the United States and Canada*. Smithsonian Institution Press, Washington. D.C. vii+587 p.