EVALUATION OF THE US 1 CROSSING PROJECT IN REDUCING KEY DEER MORTALITY
(4 Year Post-Project Report)

Submitted to
Florida Department of Transportation

By
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Synopsis

Based on the 4 years of post-project data (28 January 2003 - 31 December 2006), the US 1 corridor project has successfully reduced Key deer mortality within the project area of US 1. Key deer mortalities within the project area have decreased from an average of 12–24 mortalities per year to 2 mortalities in 2003, 1 mortality in 2004, 0 mortalities in 2005, and 3 mortalities in 2006. Key deer are using both underpasses with greater use observed for the southern US 1 underpass. While raw US 1 roadkill numbers did not decrease following completion of the US 1 Project, we attribute this to a growing Key deer population. Eight confirmed incidents of deer inside the deer exclusion area were documented during the first post-project year. This number decreased to 4 incidents in 2004, increased to 12 incidents in 2005, and increased again to 16 incidents in 2006. The increase in incidents in 2005 is attributed to fence damage during the last hurricane season. The increase in incidents in 2006 is attributed to an increase in deer crossing the bridge grating at the Long Beach Guard, the Beach Road Guard, and the US1 Guard.

Background

Approximately 60% of the Key deer (Odocoileus virginianus clavium) population live on Big Pine Key, Florida (Lopez 2001). Highway losses account for nearly half of all deer mortality for this federally-endangered deer herd. Over half of all roadkills occur on US 1, which is the only highway linking the Keys to the mainland (Lopez 2001). In the last several years, the Florida Department of Transportation (FDOT) has attempted to address Key deer highway mortality on Big Pine Key. If Key deer are to survive in a natural, self-sustaining population, methods to minimize road mortality are necessary.

In 1993, FDOT began efforts to develop and evaluate potential alternatives that would reduce Key deer mortality along the US 1 corridor on Big Pine Key (FDOT 1996, Slack 2001). In 1997, FDOT formalized a proposed set of alternatives (i.e., Final Concept Report for the US 1/SR 5 Key deer/Motorist Conflict Study, FDOT 1996), which were presented to the U.S. Fish and Wildlife Service (USFWS) for approval. In this plan (hereafter US 1 crossing project), alternatives to reduce deer mortality on Big Pine Key between mile marker 29.5 to 33.0 include the following management actions:

1. Installation of 2 wildlife underpasses consisting of bridge-type underpass (25 feet wide) at mile markers 31.5 and 32.5.
2. Installation of fencing along the US 1 corridor to prevent Key deer from gaining access to the roadway.
3. Deer guard installation to prevent deer from gaining access to the roadway (Reed et al. 1974, Reed et al. 1979, Silvy 2001).

In April 2001, final plans for the US 1 crossing project were approved. Construction for the crossing project began in August 2002 and was completed in January 2003. Texas A&M University (TAMU) was contracted to evaluate the crossing project in terms of reducing Key deer mortality. This progress report serves to present research findings 4 years post-project completion.
Monitoring Updates

**US 1 Key Deer Mortality**

The USFWS Key Deer Refuge has kept records of all known deer-vehicle mortalities along US 1 since the 1960s. Using USFWS Key Deer Refuge mortality data, annual US 1 Key deer-vehicle collisions post-project (2003–2006) were compared to pre-project deer-vehicle collisions (1996–2000). US 1 road improvements on Big Pine Key included (1) an extra traffic lane in the unfenced section (0.8 miles) of US 1 and (2) a fenced section (1.6 miles) with associated underpasses and deer guards. To evaluate the effects of each road improvement on annual Key deer-vehicle collisions, we compared US 1 Key deer-vehicle collisions by individual road segments in addition to overall impacts (Figure 1, Table 1).

![Figure 1. US 1 crossing project by area (fenced [black line] and unfenced [gray line; west of extra lane, extra lane, and east of extra lane]) on Big Pine Key, Florida.](image-url)
Fenced Section Mortality.—The fenced section of US 1 accounts for 1.6 miles (approximately 46%) of the US 1 roadway on Big Pine Key (Table 1). With fencing and 4 deer guards restricting deer access along this section of US 1, deer-vehicle collisions were predicted to decrease following the project’s completion. Annual US 1 fenced section Key deer mortality decreased 83–91% in 2003 (range depends on deer mortality observed during the pre-project period, 1996–2000), 91–95% in 2004, 100% in 2005, and 75-88% in 2006 (Figure 2).

The effectiveness of the fenced section in reducing deer-vehicle collisions is dependent on the ability of the deer guards to restrict deer crossings. In 2003 (year 1 post-project), 8 deer were reported inside the fenced section resulting in 3 mortalities. In 2004, the number of deer reported within the fenced section decreased to 4 deer with 1 entry event resulting in mortality. In 2005, deer incidents increased to 12 but resulted in 0 mortalities. In 2006, deer incidents increased to 16 with 3 resulting in mortality. We propose the decrease in deer crossings during the second year post-project is the result of deer becoming habituated to underpasses. Camera data documenting underpass use supports this premise. The increase observed in 2005 is likely the result of fence breaches due to hurricane and natural erosion. The increase observed in 2006 is likely a result of deer habituation to the bridge grating. Deer were observed crossing the bridge grating in 6 (37.5%) of the incidents. The 10 other incidents included 1 probable crossing of the bridge grating (6% of total), 2 probable fence breaches (12.5% of total), and 7 (44% of total) incidents with unknown entry locations. Routine and emergency fence maintenance would also minimize future entry by deer into the project area.

US 1 Fenced Section

![Figure 2. Annual US1 fenced-section Key deer mortality pre-project (1996-2000) and post-project (2003-2006) on Big Pine Key, Florida.](image-url)
East of Extra Lane Segment Mortality.—The east of extra lane segment of US 1 accounts for 0.6 miles (approximately 17%) of the US 1 roadway on Big Pine Key (Figure 1). We evaluated deer-vehicle collisions directly adjacent to the fenced segment of the project comparing observed mortality (2003–2006) to historic mortalities (1996–2000). Post-project mortality data indicates annual deer-vehicle collisions east of the extra lane segment were within the pre-project range in 2003. Pre-project mortalities were between 6–11 mortalities and we recorded 9 in 2003 (Figure 3). In 2004, the total of 7 deer-vehicle collisions was within the range of pre-project levels. In 2005, deer mortalities increased to 14. In 2006, deer mortalities increased to 18 (Figure 3).

![US 1 East of Extra Lane Segment](image)

Figure 3. Annual US 1 east of extra lane segment Key deer mortality pre-project (1996-2000) and post-project (2003-2005) on Big Pine Key, Florida.
**Extra Lane Segment Mortality.**—The extra lane segment of US 1 accounts for 0.8 miles (approximately 23%) of the US 1 roadway on Big Pine Key (Figure 1, Table 1). Although the fenced section was designed to reduce deer-vehicle collisions, the extra lane (necessary to improve the level of service on US 1) was hypothesized to result in additional deer-vehicle collisions due to increased mortality risk (higher average speeds, more lanes to cross). Mortalities increased from 8–13 mortalities pre-project to 20 in 2003 (Figure 4). However, in 2004 and 2005 annual deer-vehicle collisions in the extra lane were within pre-project levels (10 and 13, respectively, Figure 4). Mortalities increased to 23 in 2006.

![Figure 4. Annual US 1 extra lane segment Key deer mortality pre-project (1996-2000) and post-project (2003-2006) on Big Pine Key, Florida.](image-url)
West of Extra Lane Segment Mortality.—The west of extra lane segment of US 1 accounts for 0.5 miles (approximately 14%) of the US 1 roadway on Big Pine Key. With no roadway alterations made to the west of extra lane segment in the unfenced section (Figure 1), it was hypothesized that deer-vehicle collisions would not change in this segment. However, post-project mortality data have shown annual deer-vehicle collisions have increased in this segment in 2003–2005 (Figure 5). Annual deer-vehicle collisions increased to 11, 18, and 15 from pre-project levels (2–11 deer, 1996-2000) in 2003, 2004, and 2005, respectively (Figure 5). In 2006, annual deer-vehicle collisions (n=10) were within pre-project levels.

Figure 5. Annual US 1 west of extra lane segment Key deer Mortality pre-project (1996-2000) and post-project (2003-2006) on Big Pine Key, Florida.
Overall US 1 Mortality.—Currently, post-project mortality data indicate that overall annual US 1 Key deer mortality has not differed from pre-project levels (31–46 depending on year) with a mean of 43 annual deer-vehicle collisions in 2003–2006 (Figure 6, Table 2). The higher than expected increases in deer-vehicle collisions within the unfenced section (particularly in the west of extra lane segment) are believed to be responsible for overall US 1 mortality remaining unchanged, even though the fenced section has been effective at reducing deer-vehicle collisions. There are several factors that may explain high observed deer-vehicle collisions in the unfenced segments: (1) increased vehicular traffic along the US 1 corridor, (2) increased deer movements due to the busy hurricane season, (3) habitat improvements along the unfenced segments (particularly the west of extra lane segment), and (4) increased deer densities on Big Pine Key.

![Figure 6](image_url)  
**Figure 6.** Annual US 1 Key deer mortality for all US 1 segments pre-project (1996-2000) and post-project (2003-2006) on Big Pine Key, Florida.
First, deer-vehicle collisions may have increased due to increased traffic along the US 1 corridor. Between 1996-2000, the Average Annual Daily Traffic (AADT) was 17,700 on Big Pine Key, which increased to 18,800 between 2003-2005. In reviewing deer-vehicle collisions on Big Pine Key and No Name, however, the number of deer mortalities has increased similarly on other roads on the islands (Figure 7). Another explanation for the higher US 1 deer mortalities may include increased deer movements due to the busy hurricane season. Lopez et al. (2003) reported, for example, increased deer movements of radio-collared deer following Hurricane Georges. This hypothesis is difficult to test without radio-collared data though it remains a possibility. A third explanation in the observed increase of deer-vehicle collisions is habitat improvements. In comparing the deer-vehicle collisions along the unfenced portion of US 1 by segment, the greatest increase in deer-vehicle collisions was in the west of extra lane segment (Figure 5). In 2000-2001, USFWS biologists initiated a substantial amount of habitat improvements (e.g., invasive plant eradication, waterhole improvements, etc.) along the western end of the US 1 corridor. If this is the case, a decrease in deer roadkills would be expected with later vegetation succession. Finally, Lopez et al. (2004) reported that deer-vehicle collisions were a function of deer population densities. In reviewing deer population trends pre- and post-project, survey data suggests the Key deer population has been increasing the last 4 years (Figure 7). In fact, the average number of deer seen along the USFWS official survey route in 2006 was the highest recorded in recent history. In an effort to standardize the deer-vehicle collisions based on population density, we calculated a “roadkill per deer seen” ratio (i.e., US 1 roadkills/average deer seen) to compare pre- and post-construction years (Figure 8). In reviewing these data, population trends suggest a slight downward trend for US 1 roadkills based on the proportion of the deer population. In 2006, this trend increased slightly.

![Figure 7](image-url)  
**Figure 7.** Mean monthly deer numbers compared to both total roadkills and US 1 roadkills during pre-project (1996-2000) and post-project (2003-2006) years on Big Pine and No Name Keys, Florida.
Figure 8. The ratio of deer seen to US 1 roadkills (US 1 roadkills/MMS) pre-(1996-2000) and post-project (2003-2006). This was compared to US 1 roadkills and mean number of deer seen on the monthly surveys, Big Pine and No Name Keys, Florida.

Table 2. Key deer annual mortality (mean, standard deviation [SD]) for project years (2003-2006) and previous 5 years (1996-2000) for US 1, Big Pine Key, Florida.

<table>
<thead>
<tr>
<th>Road Section</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>1996-2000 mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>East of Extra Lane</td>
<td>9</td>
<td>7</td>
<td>14</td>
<td>18</td>
<td>8</td>
<td>2.12</td>
</tr>
<tr>
<td>Extra Lane</td>
<td>20</td>
<td>10</td>
<td>13</td>
<td>23</td>
<td>10.4</td>
<td>2.70</td>
</tr>
<tr>
<td>West of Extra Lane</td>
<td>11</td>
<td>18</td>
<td>15</td>
<td>10</td>
<td>5.8</td>
<td>3.63</td>
</tr>
<tr>
<td>Total Unfenced Section</td>
<td>40</td>
<td>35</td>
<td>42</td>
<td>51</td>
<td>24.2</td>
<td>3.31</td>
</tr>
<tr>
<td>Total Fenced Section</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>15.6</td>
<td>3.36</td>
</tr>
<tr>
<td>Total US 1</td>
<td>43</td>
<td>36</td>
<td>42</td>
<td>54</td>
<td>39.8</td>
<td>5.68</td>
</tr>
</tbody>
</table>

*There are slight discrepancies in average Key deer mortality by section in the USFWS Biological Opinion due to differences in area calculations.

Underpass/Corridor Use

Using infrared-triggered cameras, we monitored deer use of both underpasses (north and south) since January 2003. Deer increased use of both underpasses from 871 exposures in 2003 to 1,741 and 1,623 exposures in 2004 and 2005, respectively. Average monthly use increased over this same time period (from 73 in 2003 to 155 and 142 in 2004 and 2005, respectively). Deer use in November 2006 increased to a total of 287 exposures for both underpasses. The south underpass (exposures=189) continued to receive higher use than the north underpass (exposures=98). As stated in last year’s report, November is the peak of the rut and cameras have historically recorded the highest underpass use during this time period (Figure 9) and is therefore the only month now monitored. Together with
the switch to digital cameras, reduction to 1 month of monitoring will result in time, money, and manpower savings while still providing the necessary data. The underpasses continue to be used by Key deer in greater proportions than the first year of project completion.

Figure 9. November underpass (North, South, and North + South = Total) deer exposure counts for 2003-2006 on Big Pine Key, Florida. Note that November 2005 directly followed hurricane Wilma which impacted South Florida and the Keys October 24, 2005.
LITERATURE CITED

Florida Department of Transportation. 1996. US-1/SR 5 Key Deer/Motorist Conflict Study Concept Report. Florida Department of Transportation, District Six, Miami, Florida, USA.


Slack, J. J. 2001. US 1 Key deer underpass project biological opinion. USFWS Biological Opinion letter (FWS log number 4-1-98-F-777) to FDOT, Tallahassee, Florida, USA.
APPENDIX A

DOCUMENTED KEY DEER ENTRIES INTO THE US 1 CORRIDOR PROJECT
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 1

Observer: Anthony Braden  Date: 18 February 2003  Time: 0900-1000

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Age:</th>
<th>Tattoo/Collar/Ear Tag:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Male</td>
<td>☐ Fawn  ☐ &lt; 3 yr Adult</td>
<td>No collar seen, unknown if tattooed.</td>
</tr>
<tr>
<td>☐ Female</td>
<td>☐ Yearling  ☐ &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>☐ Unknown</td>
<td></td>
<td>Notes: 2 deer, ages uncertain.</td>
</tr>
</tbody>
</table>

**Location (see map below):** Key deer were first observed south of the USFWS gravel pit gate. One deer traveled toward the south underpass and the other traveled toward the north underpass.

**How did deer enter the project area?***: The point of entrance is believed to be the Gravel Pit gate. The Gravel Pit gate was observed to be open for extended periods before the first incident occurred. This problem has been corrected.

**How was deer removed from project area?***: One deer exited the area using an access gate near the south underpass and the other exited through an access gate near the Beach Road Guard. Neither deer crossed the guard.

*If unsure about the entry or exit, please note. Feel free to speculate.

**Other Comments:**

- Both deer were removed before arrival on the scene.
- Monroe County Sheriff’s Department removed 1 deer from the fence area and National Key Deer staff removed the other.
- **Action** - padlocks installed on all access gates.

![Location/Movement in the fence](image)
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 2

Observer: Anthony Braden  Date: 14 May 2003  Time: 2000-2100

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Age:</th>
<th>Tattoo/Collar/Ear Tag:</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Male</td>
<td>□ Fawn  □ &lt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>□ Female</td>
<td>□ Yearling  □ &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>□ Unknown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: The exact age unknown.

Location (see map below): Deer was first observed along the roadside south of the USFWS gravel pit gate. Key deer then traveled north toward the gravel pit gate. The deer left the project area by crossing the Beach Road deer guard.

How did deer enter the project area?: The point of entrance is uncertain. I speculate the deer entered the fence from either the Beach Road deer guard or the Outward Bound deer guard because all access gates were found to be closed.

How was deer removed from project area?: Although the gravel pit gate was open, the deer exited the project area by walking across the Beach Road deer guard.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:

- The deer was discovered while collecting radio-telemetry location data.
- The deer was first observed calmly browsing along the roadside, suggesting it did not feel entrapped.
- Only research personnel were involved in the deer’s removal. The deer crossed the guard unharmed.
- **Action** – continue to monitor the effectiveness of deer guards.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 3

Observer: Clay Roberts  Date: 10 July 2003  Time: 2300-2400

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Age:</th>
<th>Tattoo/Collar/Ear Tag:</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Male</td>
<td>◯ Fawn</td>
<td>No collar seen, unknown if tattooed.</td>
</tr>
<tr>
<td>◯ Female</td>
<td>◯ Yearling</td>
<td></td>
</tr>
<tr>
<td>◯ Unknown</td>
<td>◯ &gt; 3 yr Adult</td>
<td></td>
</tr>
</tbody>
</table>

Notes: The exact age unknown.

Location (see map below): The deer was first observed on the North Underpass bridge. The deer then traveled south toward the USFWS gravel pit gate and the Beach Road deer guard. The deer exited over the Beach Road deer guard.

How did deer enter the project area?*: The point of entrance is uncertain. I speculate the deer entered the fence from either the Beach Road deer guard or the Outward Bound deer guard based on the previous documented crossings and because all access gates were found to be closed.

How was deer removed from project area?*: Although the USFWS gravel pit gate was open, the deer exited the project area by crossing the Beach Road deer guard.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:

- The Monroe County Sheriff’s Department was the first on the scene and assisted in the removal of the deer from the project area.

- It is uncertain, but this deer could possibly be the same deer that entered the fence area on 14 May 2003.

- Action – continue to monitor the effectiveness of deer guards.
**KEY DEER US 1 CROSSING PROJECT INCIDENT: # 4**

<table>
<thead>
<tr>
<th>Observer: Anthony Braden</th>
<th>Date: 6 August 2003</th>
<th>Time: 0000-0010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex:</strong></td>
<td><strong>Age:</strong></td>
<td><strong>Tattoo/Collar/Ear Tag:</strong></td>
</tr>
<tr>
<td>□ Male</td>
<td>□ Fawn</td>
<td>The deer was collared, but the collar number was not recorded.</td>
</tr>
<tr>
<td>■ Female</td>
<td>□ Yearling</td>
<td>Notes: The exact age is unknown.</td>
</tr>
<tr>
<td>□ Unknown</td>
<td>□ &gt; 3 yr Adult</td>
<td></td>
</tr>
</tbody>
</table>

**Location (see map below):** The deer was seen near the Beach Road Guard. The exact deer movement in the project area is unknown.

**How did deer enter the project area?** The point of entrance is unknown, but believed to be one of the road guards, either the Beach Road Guard or the Outward Bound Guard.

**How was deer removed from project area?** The deer crossed the Beach Road Guard to leave the project area.

*If unsure about the entry or exit, please note. Feel free to speculate.

**Other Comments:**

- Monroe County Sheriff’s Department found the deer on scene and assisted in removing the deer from the fence area.

- The deer left the project area before the observer had time to reach the scene.

- **Action** – Coordinating with FDOT to install lights under the deer guard to serve as a deterrent for Key deer crossings.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 5

Observer: Anthony Braden  Date: 25 August 2003  Time: 2130-2230

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Age:</th>
<th>Tattoo/Collar/Ear Tag:</th>
</tr>
</thead>
<tbody>
<tr>
<td>□  Male</td>
<td>□  Fawn  □  &lt; 3 yr Adult</td>
<td>The deer was collared and tattooed as #264.</td>
</tr>
<tr>
<td>■  Female</td>
<td>□  Yearling  ■  &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>□  Unknown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: 3 year old doe.

Location (see map below):  The deer was seen near the Outward Bound Guard. The deer was hit by a vehicle ~60 m west of MM 32. The exact deer movement in the project area is unknown.

How did deer enter the project area?*:  The point of entrance is unknown, but believed to be the Outward Bound Guard.

How was deer removed from project area?*:  The deer was hit by a vehicle and died in the project area, i.e. MORTALITY #1 in the project area since its completion.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:

- Monroe County Sheriff’s Department and Florida Fish and Wildlife Commission found the deer dead on scene, but did not know how the deer entered the fence area.
- The deer had 2 fetuses near term.
- Mortality #1 for the project area since its completion.
- Action –Lights were installed at the Beach Road Guard and the Outward Bound Guard.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 6

Observer: Anthony Braden  Date: 21 October 2003  Time: 1600-1700

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Age:</th>
<th>Tattoo/Collar/Ear Tag:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Male</td>
<td>☐ Fawn ☐ &lt; 3 yr Adult</td>
<td>Unknown, deer not seen.</td>
</tr>
<tr>
<td>■ Female</td>
<td>☐ Yearling ☐ &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>☐ Unknown</td>
<td></td>
<td>Notes: Age uncertain.</td>
</tr>
</tbody>
</table>

**Location (see map below):** A Big Pine Key resident reported an adult female inside the fence near the Long Beach Road Guard. The deer was not seen.

**How did deer enter the project area?**: Unknown, although 1 side gate was found open near the North Underpass, 1 gate was not properly latched near the Long Beach Road Guard, and 3 gates (total) were not locked.

**How was deer removed from project area?**: Unknown, possibly by crossing the Long Beach Road Guard.

*If unsure about the entry or exit, please note. Feel free to speculate.

**Other Comments:**

- The deer was not seen by researchers or USFWS refuge staff, and possibly could not have been in the fence.

- Three side gates were not properly closed by the Florida Department of Transportation maintenance crew during and after mowing the area.

- **Action**—Inform road maintenance personal of importance of properly closing and locking side gates.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 7

Observer: Shane W. Whisenant  Date: 17 December 2003  Time: 17:45

<table>
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<th>Sex:</th>
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<th>Tattoo/Collar/Ear Tag:</th>
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</thead>
<tbody>
<tr>
<td>■ Male</td>
<td>□ Fawn  □ &lt; 3 yr Adult</td>
<td>None</td>
</tr>
<tr>
<td>□ Female</td>
<td>□ Yearling  ■ &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>□ Unknown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: 4.5 years.

Location (see map below): The buck was found grazing inside the fenced area of U.S. 1 at mile marker 32.5 at approximately 17:45.

How did deer enter the project area?: It is unknown how the deer entered the fenced area. It may have crossed the Long Beach Guard. We found no unlocked gates.

How was deer removed from project area?: The buck was trapped using a drive net along the east side of the South Underpass formed by the underpass guard wall and the chain link fence. The deer sustained an injury to its muzzle through contact with the chain link fence during trapping. Key Deer Refuge personnel determined the injury was too severe for release, so the animal was euthanized.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:

- The deer was healthy and showed no sign of disease.
- 2nd deer mortality in fence area since project completion.
- Action: Request by Key Deer Refuge personnel for gate construction at the end of each side of the underpasses (east and west) to assist in safe deer removal from the fence area.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 8

Observer: Shane W. Whisenant  Date 18 December 2003  Time: 11:00

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Age:</th>
<th>Tattoo/Collar/Ear Tag:</th>
</tr>
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<tbody>
<tr>
<td>☐ Male</td>
<td>☐ Fawn  ☐ &lt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>☐ Female</td>
<td>☐ Yearling  ☐ &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>☐ Unknown</td>
<td></td>
<td>Notes:</td>
</tr>
</tbody>
</table>

**Location (see map below):** Hole was located at east end of US1, just before the bridge to West Summerland Key on the north side of the road.

**How did deer enter the project area?**: No deer entered the fence area. This report is to record a hole in the chain link fence. No mortality witnessed or deer seen in the fenced area on US 1.

**How was deer removed from project area?**: N/A

*If unsure about the entry or exit, please note. Feel free to speculate.

**Other Comments:**

- The hole was located on the north side of the east end of the US 1 fence, just before the bridge to West Summerland Key. The hole was at the 90° angle made by the fence as it ran back towards US 1. I (Shane) wired the fence shut with approximately 7 multiple wrapped ties of bailing wire.

- It appears the fence was cut to gain access to the water from the east end of US 1 on Big Pine Key.

- **Action**—Chain link fence needs to be repaired.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 9

Observer: Vicente Lopez - Reported by Shane W. Whisenant
Date 29 January 2004 Time: 7:00 AM

Sex:
- [ ] Male
- [ ] Female
- [ ] Unknown

Age:
- [ ] Fawn
- [ ] Yearling
- [ ] < 3 yr Adult
- [ ] > 3 yr Adult

Tattoo/Collar/Ear Tag:
- Unknown/NO/NO

Notes: Adult, Age unknown

Location (see map below):
The Key deer was located at mile marker 31.5, and traveled north on U.S. 1 to the south underpass tunnel (formed by the underpass wall and fence) on the north bound side of U.S. 1.

How did deer enter the project area?: Not sure, may have crossed the Outbound deer guard.

How was deer removed from project area?: The deer was coerced into the tunnel formed by the south underpass (northbound side) wall and the fence by Officer Lopez in his car. Officer Lopez got out of his car to herd the deer on foot to a gate in the fence, but the deer forced its way out under the fence at the end of the tunnel. There was a large amount of hair left on the bottom of the fence at the point of exit.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:

- The deer was not killed; this is not a mortality case.

- The exit hole will temporarily be closed (until FDOT can fix it properly) to avoid entry by other deer (fawns), the hole is probably not large enough for older age class deer to use as an entryway

- Action – The fence will be walked to assess the need for more gates and to check for more holes.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 10

Observer: Shane Whisenant and Andrew Gude
Date: 10 May 2004
Time: 9:00 AM

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Age:</th>
<th>Tattoo/Collar/Ear Tag:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Fawn &lt; 3 yr Adult</td>
<td>Unknown/NO/NO</td>
</tr>
<tr>
<td>Female</td>
<td>Yearling &gt; 3 yr Adult</td>
<td>Unknown/NO/NO</td>
</tr>
<tr>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Adult, Age unknown

**Location (see map below):** The Key deer was seen by two Monroe County Public Works employees at mile marker 32.0, and traveled south on U.S. 1 to the south underpass tunnel (MM 32.5) (formed by the underpass wall and fence) on the bay side of U.S. 1.

**How did deer enter the project area?**: Not sure, may have crossed the outbound deer guard.

**How was deer removed from project area?**: Biologists Gude and Whisenant tried to run the deer out of the gate they had opened at the end of the tunnel, but the deer ran past the open gate, crossed U.S. 1 to the ocean side and continued toward Big Pine Key. At mile marker 31.5 the deer turned around and ran into the tunnel (MM 32.5) on the ocean side, we were able to open a gate inside the tunnel and flush the deer out through the gate.

*If unsure about the entry or exit, please note. Feel free to speculate.

**Other Comments:**

- The deer was not killed; this is not a mortality case.

- **Action** – The fence needs exit gates at the end of all tunnels formed by underpass walls and the fence.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 11

Observer: Israel Parker  
Date: 25 September 2004  
Time: 0545-0930

<table>
<thead>
<tr>
<th>Sex:</th>
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<tbody>
<tr>
<td>🔄 Male</td>
<td>🟢 Fawn</td>
<td>NO/NO/NO</td>
</tr>
<tr>
<td>🟠 Female</td>
<td>🟡 &lt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>🟣 Unknown</td>
<td>🟤 &gt; 3 yr Adult</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

Location (see map below): Just south of US1 Guard. He was on the shoulder of the highway rested against concrete barrier lining sides of North Underpass. He was on the actual overpass about 30 meters south of the US1 Guard.

How did deer enter the project area?*: Unknown, The sheriff’s deputy had no information. It was found on site. It is likely that it entered over the North Underpass US1 Guard and was hit by vehicle but exact movements are unknown.

How was deer removed from project area: The deer was hooded and bound and placed on a stretcher. It was then taken to the refuge via truck.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:

- The deer was very weak upon arrival at scene.
- Its legs were folded up underneath it. Injuries and situation indicated vehicle collision.
- **Action** - The injuries required euthanasia (Mortality #2712)
**KEY DEER US 1 CROSSING PROJECT INCIDENT: # 12**

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Age:</th>
<th>Tattoo/Collar/Ear Tag:</th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td>Fawn</td>
<td>Unknown/NO/NO</td>
</tr>
<tr>
<td>Female</td>
<td>Yearling</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>&gt; 3 yr Adult</td>
<td></td>
</tr>
</tbody>
</table>

**Observer:** Israel Parker  
**Date:** 29 September 2004  
**Time:** 0715-0735

**Location (see map below):** The buck was inside the US1 deer fence near Long Beach Rd. on the Long Beach side of US1

**How did deer enter the project area?***: Unknown, No one witnessed the buck moving onto US1 but it probably entered via the Long Beach Rd. deer guard.

**How was deer removed from project area:** The deer trotted up and down US1 looking for an exit from US1. I moved to the center median to discourage the deer from crossing into traffic. It continued to run up and down the fence but eventually ran towards the Long Beach Rd. deer guard. As it saw the opening it increased speed and ran over the deer guard without breaking stride and continued down Long Beach Rd for 300-400 meters before veering into the hammock.

*If unsure about the entry or exit, please note. Feel free to speculate.

**Other Comments:**

- I inspected both sides of the US 1 fence from the South Underpass to the bridge heading off island and found no openings big enough for an adult buck to get through.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 13

Observer: Israel Parker, Les Pulley, PJ Stevko, Sheriff’s Deputy
Date: 4/24/05  Time: 1045-1115

<table>
<thead>
<tr>
<th>Sex:</th>
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<tbody>
<tr>
<td>Male</td>
<td>Fawn</td>
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</tr>
<tr>
<td>Female</td>
<td>Yearling</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>&gt; 3 yr Adult</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** Young and Small

Location (see map below): First seen on south US 1 underpass. It moved north along the east side of the highway. It was ushered out of the area over the Outward Bound deer guard.

How did deer enter the project area?: Unknown. It was moving north over the south underpass when first located. The deer likely crossed over the Long Beach Rd. deer guard.

How was deer removed from project area: USFWS Officer Les Pulley and a Sheriff’s deputy coerced the deer to egress over the Outward Bound deer guard.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:

- It was a small young female.
- When pressed by the officers she crossed over the deer guard without slowing down.

---

**Map Diagram:**

- Location/Movement in the fence
- Exit direction
- Mortality location
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 14

Observer: Sheriff’s Deputy  Date: 5/2/2005  Time: 0530-0545

Sex:  Age:  Tattoo/Collar/Ear Tag:  Notes:  Age unknown
- Male  - Fawn  - < 3 yr Adult  Unknown/NO/NO
- Female  - Yearling  - > 3 yr Adult
- Unknown  

Location (see map below): US 1, mm 33.5 between fences

How did deer enter the project area?*: Unknown, Deer was around the Spanish Harbor bridge and likely entered from the Long Beach Rd. deer guard or around fence

How was deer removed from project area: Unknown, Deputy had left before we arrived but report stated that the deer was around the Spanish Harbor bridge and “figured out” how to get out. This implies over the Long Beach deer guard or around the end of the fence

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:
- Entrance and exit speculative
- I called Sheriff’s dispatch but the report had very little in it.
- The deer was apparently panicked and running head-first into the fencing
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 15

Observer: Russ Costa  Date: 6/16/05  Time: 2000

<table>
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<th>Sex:</th>
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</tr>
<tr>
<td>☒ Female</td>
<td>☐ Yearling ☐ &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>☐ Unknown</td>
<td></td>
<td></td>
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</tbody>
</table>

Notes: Adult, Age unknown

Location (see map below): Near mm 32 on the gulf side

How did deer enter the project area?*: Best guess that the deer entered the project area through the damaged gate south of the south underpass. It squeezed through the gap.

How was deer removed from project area?: Russ opened a gate between Beach Rd. and Outward Bound. The deer ran out of this gate

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:

- Recommend that the gate be further repaired by DOT.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 16

Observer: Tom Wilmers, Russ Costa  Date: 7/20/05  Time: 1920

<table>
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<tr>
<th>Sex:</th>
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<tr>
<td>□ Male</td>
<td>□ Fawn □ &lt; 3 yr Adult</td>
<td>Unknown/NO/NO</td>
</tr>
<tr>
<td>□ Female</td>
<td>□ Yearling □ &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>■ Unknown</td>
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<td></td>
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</table>

Notes: Had Spots

Location (see map below): Adjacent to Long Beach Rd. near Spanish Harbor Channel

How did deer enter the project area?*: Unknown. Possibly entered over the Long Beach deer guard

How was deer removed from project area: Deer not found by Refuge personnel or Sheriff’s Deputies. It was already gone by the time personnel arrived

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:

Call came from Elaine Wilmers about a fawn between the fences. It was reported to be disrupting traffic.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 17

Observer: FWC Officer  Date: 7/28/05  Time:  2130

<table>
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<th>Sex:</th>
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<tbody>
<tr>
<td>Male</td>
<td>Fawn &lt; 3 yr Adult</td>
<td>Unknown/NO/NO</td>
</tr>
<tr>
<td>Female</td>
<td>Yearling &gt; 3 yr Adult</td>
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</tr>
<tr>
<td>Unknown</td>
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</tbody>
</table>

Notes: Unknown age

Location (see map below):  mm 32, running up and down fence

How did deer enter the project area?:  Unknown. Possibly through gaps under fence south of the south underpass

How was deer removed from project area?:  Deer not found by refuge personnel. It was already gone by the time personnel arrived. FWC reportedly on scene but gone by the time refuge personnel arrived.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:

Gaps need to be fenced soon. I fixed a couple of them temporarily but they need to be addressed.
**KEY DEER US 1 CROSSING PROJECT INCIDENT: # 18**

<table>
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<th>Sex:</th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td>Fawn &lt; 3 yr Adult</td>
<td>Unknown/NO/NO</td>
</tr>
<tr>
<td>Female</td>
<td>Yearling &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>Notes: Unknown age</td>
<td></td>
</tr>
</tbody>
</table>

**Observer:** Florida Fish and Game  
**Date:** 7/29/05  
**Time:** 0700

**Location (see map below):** near Big Pine Fishing Lodge, running up and down fence

**How did deer enter the project area?:** Unknown. Possibly through gaps under fence south of the south underpass

**How was deer removed from project area:** Deer not found by refuge personnel. It was already gone by the time personnel arrived.

*If unsure about the entry or exit, please note. Feel free to speculate.

**Other Comments:**

Gaps need to be fenced soon. I fixed a couple of them temporarily but they need to be addressed.
### KEY DEER US 1 CROSSING PROJECT INCIDENT: # 19

<table>
<thead>
<tr>
<th>Observer</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominique Watts and</td>
<td>9/09/05</td>
<td>0745-0830</td>
</tr>
<tr>
<td>Russ Costa</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sex:**
- ■ Male
- □ Female
- □ Unknown

**Age:**
- □ Fawn
- □ < 3 yr Adult
- ■ Yearling
- □ > 3 yr Adult

**Tattoo/Collar/Ear Tag:**
- Unknown/NO/NO

**Notes:** Spike Buck

**Location (see map below):** Near south underpass, between fence and northwest wall of underpass

**How did deer enter the project area?**
*Unknown. Likely entered over deer guard near north underpass.*

**How was deer removed from project area:** Egressed through gate on north-west side of underpass after TAMU and USFWS personnel unlocked the gate.

*If unsure about the entry or exit, please note. Feel free to speculate.

**Other Comments:**

---

![Map of location and movement](image_url)
**KEY DEER US 1 CROSSING PROJECT INCIDENT: # 20**

<table>
<thead>
<tr>
<th>Observer: Russ Costa</th>
<th>Date: 10/28/05</th>
<th>Time: 0745-0830</th>
</tr>
</thead>
</table>

**Sex:**
- Male
- Female
- Unknown

**Age:**
- Fawn
- Yearling
- < 3 yr Adult
- > 3 yr Adult

**Tattoo/Collar/Ear Tag:**
- Unknown
- NO
- NO

**Notes:**
- Unknown

**Location (see map below):** Near south underpass

**How did deer enter the project area?**: Unknown

**How was deer removed from project area:** The gate southwest of the south underpass was opened and the deer was ushered out.

*If unsure about the entry or exit, please note. Feel free to speculate.

**Other Comments:** Maintenance of the fencing is needed. Erosion continues to be a problem.

![Map of Key Deer US 1 Crossing Project Incident](image-url)
### Key Deer US 1 Crossing Project Incident: # 21

**Observer:** Fish and Wildlife Commission Officer  
**Date:** 10/30/05  
**Time:** 1230-1310

<table>
<thead>
<tr>
<th>Sex:</th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td>□ Fawn □ &lt; 3 yr Adult □ &gt; 3 yr Adult</td>
<td>Unknown/NO/NO</td>
</tr>
<tr>
<td>Female</td>
<td>■ Yearling</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Notes:           |

**Location (see map below):** Near south underpass

**How did deer enter the project area?**: Unknown. Possibly through holes caused by erosion.

**How was deer removed from project area:** Unknown exit. By the time TAMU personnel arrived the deer had exited the fenced area. No officers witnessed the exit. Possibly exited through holes under the fencing caused by erosion near the south underpass.

*If unsure about the entry or exit, please note. Feel free to speculate.

**Other Comments:**

![Location Map](image-url)
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 22

Observer: USFWS Officer Les Pulley, Israel Parker, Steve Nelms
Date: 11/07/05 Time: 1130-1200

Sex: □ Male □ Female □ Unknown
Age: □ Fawn □ < 3 yr Adult □ Yearling □ > 3 yr Adult
Tattoo/Collar/Ear Tag: Unknown/NO/NO

Location (see map below): Near south underpass between underpass wall and fencing.

How did deer enter the project area?: Unknown. Possibly through holes caused by erosion near the south underpass.

How was deer removed from project area: The deer was trapped between the fencing and the underpass wall by USFWS and TAMU personnel. The gate at the end of this corridor was opened and the deer was herded out.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments: Israel Parker and Russell Dempsey temporarily repaired several sections of erosion under the US 1 fencing. Further maintenance will be required.
Observer: Russ Costa, USFWS
Officer Les Pulley

Date: 12/03/05  Time: 1930

<table>
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<th>Age:</th>
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<tbody>
<tr>
<td>□ Male</td>
<td>□ Fawn</td>
<td>Unknown/NO/NO</td>
</tr>
<tr>
<td>□ Female</td>
<td>□ Yearling</td>
<td>Unknown/NO/NO</td>
</tr>
<tr>
<td>□ Unknown</td>
<td>□ &lt; 3 yr Adult</td>
<td>Unknown/NO/NO</td>
</tr>
<tr>
<td>□ &gt; 3 yr Adult</td>
<td></td>
<td>Unknown/NO/NO</td>
</tr>
</tbody>
</table>

Notes: Adult, Age unknown

Location: Moving along US 1 near the south underpass

How did deer enter the project area?: Unknown

How was deer removed from project area?: A side gate near the south underpass was unlocked and the deer was herded out by USFWS personnel.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:

- Location/Movement in the fence
- Exit direction
- Mortality location
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 24

Observer: Russ Costa  Date: 12/01/05  Time: 1100-1215

Location/Movement
Exit direction
Mortality location

Age:
- Male
- Female
- Unknown

Tattoo/Collar/Ear Tag:
Unknown/NO/NO

Sex:
- Male
- Female
- Unknown

Notes:

Location (see map below): Near south underpass.

How did deer enter the project area?: Unknown. Possibly through holes caused by erosion near the south underpass.

How was deer removed from project area: The deer was herded out a side gate southwest of the south underpass.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments: Erosion has reappeared along the south underpass.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 25

<table>
<thead>
<tr>
<th>Observer: Israel Parker and Sarah Kahllich</th>
<th>Date: 1/26/06</th>
<th>Time: 0945-1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex:</td>
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<tr>
<td>■ Male</td>
<td>■ Fawn</td>
<td>NO/NO/NO</td>
</tr>
<tr>
<td>□ Female</td>
<td>□ Yearling</td>
<td></td>
</tr>
<tr>
<td>□ Unknown</td>
<td>■ &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>Notes: 4x4 antlers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Location/Movement in the fence | Exit direction | Mortality location |

Location (see map below): Found dead just south of Beach Rd.

How did deer enter the project area?*: Unknown. There was no information on this deer. There are no holes large enough for a buck this size to get in through. It is likely that he came over a deer guard. He was a large buck with hooves that may be large enough to walk over the guard,

How was deer removed from project area: The deer was killed due to a vehicle collision. It was resting against the fencing. It was removed and necropsied.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments: Erosion has reappeared along the south underpass.
KEY DEER US 1 CROSSING PROJECT INCIDENT: # 26

Observer: Israel Parker and Sarah Kahlich
Date: 2/10/06
Time: 1230-1300

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Age:</th>
<th>Tattoo/Collar/Ear Tag:</th>
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<tbody>
<tr>
<td>□ Male</td>
<td>□ Fawn</td>
<td>Unknown/NO/NO</td>
</tr>
<tr>
<td>■ Female</td>
<td>□ Yearling</td>
<td></td>
</tr>
<tr>
<td>□ Unknown</td>
<td>□ &gt; 3 yr Adult</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

Location (see map below): She was between the fence and the south underpass wall on the Atlantic side of US 1

How did deer enter the project area?*: Unknown. She was small enough that entry over deer guards was less likely. There are several small openings caused by erosion and gates not closed tightly.

How was deer removed from project area: We opened the gate located where the fencing meets the south underpass. In our parlance, we opened the gate at the end of the chute. We then herded her north out through the open gate.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments: Erosion has reappeared along the south underpass and several gates are not tightly closed along US 1.
KEY DEER US 1 CROSSING PROJECT Incident Report # 27

Observer: Nelms, Wilmers, Costa, Gallagher (USFWS)
Date: 5/25/06
Time: 1400-1410

Sex:
- Male
- Female
- Unknown

Age:
- Fawn
- Yearling
- < 3 yr Adult
- > 3 yr Adult

Tattoo/Collar/Ear Tag:
Unknown/NO/NO

Notes:

Location (see map below): Between MM 32.8-32.9.

How did deer enter the project area?: Unknown.

How was deer removed from project area: By the time we reached the FWC officer, the deer had already crossed the deer guard back onto Long Beach Road. The officer said the deer stopped before attempting to cross then gingerly walked across the deer guard.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:
### KEY DEER US 1 CROSSING PROJECT Incident Report # 28

<table>
<thead>
<tr>
<th>Sex:</th>
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<tr>
<td>☐ Male</td>
<td>☐ Fawn ☐ &lt; 3 yr Adult</td>
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<tr>
<td>☐ Female</td>
<td>☐ Yearling ☐ &gt; 3 yr Adult</td>
<td></td>
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<tr>
<td>☐ Unknown</td>
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</table>

**Observer:** Costa (USFWS)  **Date:** 7/02/06  **Time:** Early AM  

**Notes:**

| Location (see map below): MM 32.5 |

**How did deer enter the project area?**: Unknown. Possibly through opening created across road from Big Pine Fish Camp.

**How was deer removed from project area:** Call from sheriff’s dispatch was at 0615. Deer was found dead at 0630. Apparently road kill.

*If unsure about the entry or exit, please note. Feel free to speculate.

**Other Comments:**
Opening in fence was reported and temporarily fixed on 5 July 2006.
KEY DEER US 1 CROSSING PROJECT Incident Report # 29

Observer: Perry, N. P.  Date: 7/11/06  Time:  1700-1730

<table>
<thead>
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<th>Tattoo/Collar/Ear Tag:</th>
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<tbody>
<tr>
<td>□ Male</td>
<td>□ Fawn</td>
<td>□ &lt; 3 yr Adult</td>
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<tr>
<td>□ Female</td>
<td>□ Yearling</td>
<td>□ &gt; 3 yr Adult</td>
</tr>
<tr>
<td>□ Unknown</td>
<td></td>
<td>NO/NO/NO</td>
</tr>
</tbody>
</table>

**Notes:**

Location (see map below): Sheriff’s dispatch reported the deer near MM 30.5

*If unsure about the entry or exit, please note. Feel free to speculate.*

**How did deer enter the project area?**: Unknown.

**How was deer removed from project area:** Call from sheriff’s dispatch was at 1700. Deer was found at the end of the northwestern section of fence in the narrow causeway between the overpass wall and the fence. A second fawn, outside the fenced area had been watching the trapped fawn and appeared anxious. Assuming they may have been twins, I hand captured the trapped deer, drove it across US-1 and released it near the second fawn near the beach road guard.

**Other Comments:**
Deer appeared normal and ran quickly in the direction of the second fawn after release.
KEY DEER US 1 CROSSING PROJECT Incident Report # 30

Observer: Perry, N. P.  Date: 8/10/06  Time: 0800-0810

<table>
<thead>
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<tr>
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<td>Female</td>
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<td>Unknown</td>
<td>Notes:</td>
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</table>

*If unsure about the entry or exit, please note. Feel free to speculate.

Location (see map below): Sheriff’s dispatch reported the deer within the fences

How did deer enter the project area?*: Unknown.

How was deer removed from project area: Highway patrol officer on the scene watched some tourists divert the deer into the road. The officer then witnessed the deer run to and, north, along the fence east of the road and quickly walked across the Beach Rd. deer guard.

Other Comments: Only the officer witnessed the event.
**KEY DEER US 1 CROSSING PROJECT Incident Report # 31**

<table>
<thead>
<tr>
<th>Observer: Perry, N. P.</th>
<th>Date: 8/15/06</th>
<th>Time: 0915-0930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex:</td>
<td>Age:</td>
<td>Tattoo/Collar/Ear Tag:</td>
</tr>
<tr>
<td>❑ Male</td>
<td>❑ Fawn</td>
<td>NO/NO/NO</td>
</tr>
<tr>
<td>❑ Female</td>
<td>❑ Yearling</td>
<td></td>
</tr>
<tr>
<td>❑ Unknown</td>
<td>❑ &lt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>❑ &gt; 3 yr Adult</td>
<td>❑ &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>Notes:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Location (see map below):* Motorist contacted the refuge visitor center and reported deer wandering within the fenced area…no specific location was given. I found the deer in the southwest causeway of the south underpass.

*How did deer enter the project area?:* Unknown.

*How was deer removed from project area?:* I opened the combination locked gate on the southwest causeway of the south underpass. Paul Stevco (refuge staff) and Heather Cole (refuge volunteer) slowly drove the doe through the gate.

*If unsure about the entry or exit, please note. Feel free to speculate.*

**Other Comments:**
KEY DEER US 1 CROSSING PROJECT Incident Report # 32

Observer: Costa, Russ  Date: 8/18/06  Time: 0730-0830

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Age:</th>
<th>Tattoo/Collar/Ear Tag:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>□ Fawn</td>
<td>NO/NO/NO</td>
</tr>
<tr>
<td>Female</td>
<td>□ Yearling</td>
<td>NO/NO/NO</td>
</tr>
<tr>
<td>Unknown</td>
<td>□ &gt; 3 yr Adult</td>
<td>NO/NO/NO</td>
</tr>
</tbody>
</table>

Notes:

Location (see map below): Walked along fence on east side of road, eventually crossed, without hesitation, at the beach road crossing.

How did deer enter the project area?: Unknown.

How was deer removed from project area: Russ and two other refuge employees walked the deer towards the underpass and it walked quickly across the guard.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:
KEY DEER US 1 CROSSING PROJECT Incident Report # 33

<table>
<thead>
<tr>
<th>Observer: Schmidt, Jason</th>
<th>Date: 09/09/06</th>
<th>Time: 0730</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex:</td>
<td>Age:</td>
<td>Tattoo/Collar/Ear Tag:</td>
</tr>
<tr>
<td>• Male</td>
<td>□ Fawn □ &lt; 3 yr Adult</td>
<td>NO/NO/NO</td>
</tr>
<tr>
<td>• Female</td>
<td>□ Yearling □ &gt; 3 yr Adult</td>
<td>Notes: Six Point Buck</td>
</tr>
<tr>
<td>• Unknown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*If unsure about the entry or exit, please note. Feel free to speculate.

Location (see map below): Buck was inside fence, east of the road.

How did deer enter the project area*: Buck crossed the Long Beach Guard.

How was deer removed from project area: Two state troopers, myself and Paige Schmidt walked the deer towards a side gate that I had opened. As soon as it saw the opening in the fence, it exited.

*If unsure about the entry or exit, please note. Feel free to speculate.

Other Comments:

Buck was observed crossing the guard by someone at the fish camp. It subsequently crossed both lanes of traffic. State troopers passing through stopped and turned on their lights to slow traffic down.
Observer: Schmidt, Jason  Date: 10/02/06  Time: 0800

Sex: 
- Male 
- Female 
- Unknown

Age: 
- Fawn 
- Yearling 
- < 3 yr Adult 
- > 3 yr Adult

Tattoo/Collar/Ear Tag: NO/NO/NO

Location (see map below): Outside cattle guard north of Fish Camp.

How did deer enter the project area*: Crossed the Long Beach Guard.

How was deer removed from project area: Fish Camp personnel herded deer back across guard.

*If unsure about the entry or exit, please note. Feel free to speculate.

The deer was already back across the guard when I arrived.
KEY DEER US 1 CROSSING PROJECT Incident Report # 35

<table>
<thead>
<tr>
<th>Observer: Schmidt, Jason</th>
<th>Date: 10/04/06</th>
<th>Time: 0800</th>
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<table>
<thead>
<tr>
<th>Sex:</th>
<th>Age:</th>
<th>Tattoo/Collar/Ear Tag:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Fawn □, &lt; 3 yr Adult □</td>
<td>NO/NO/NO</td>
</tr>
<tr>
<td>Female</td>
<td>Yearling □, &gt; 3 yr Adult □</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

**Location (see map below):** On Bridge east of Big Pine Key

**How did deer enter the project area?**: Unknown, probably crossed the Long Beach Guard.

**How was deer removed from project area**: Officer herded deer NORTH/EAST across bridge in patrol car.

*If unsure about the entry or exit, please note. Feel free to speculate.*

The deer was later seen on Ohio Key in front of Shell filling station. At this time deer is still east of the project area.
Observer: Schmidt, Jason  Date: 10/10/06  Time: 0300

<table>
<thead>
<tr>
<th>Sex:</th>
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<th>Tattoo/Collar/Ear Tag:</th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td>☐ Fawn  ☐ &lt; 3 yr Adult</td>
<td>NO/NO/NO</td>
</tr>
<tr>
<td>Female</td>
<td>☐ Yearling  ☐ &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>Notes: Spiked buck</td>
<td></td>
</tr>
</tbody>
</table>

Location (see map below): On Bridge at Mile Marker 33.2

How did deer enter the project area?*: Unknown, probably crossed the Long Beach Guard.

How was deer removed from project area: I picked up the dead animal this morning.

*If unsure about the entry or exit, please note. Feel free to speculate.

The deer was on the bridge and was hit by a vehicle at approximately 3 am. An officer moved the animal onto the shoulder and I picked the animal up.
KEY DEER US 1 CROSSING PROJECT Incident Report # 37

<table>
<thead>
<tr>
<th>Observer: Schmidt, Jason</th>
<th>Date: 10/18/06</th>
<th>Time: 0550</th>
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<tbody>
<tr>
<td><strong>Sex:</strong></td>
<td><strong>Age:</strong></td>
<td><strong>Tattoo/Collar/Ear Tag:</strong></td>
</tr>
<tr>
<td>☐ Male</td>
<td>☐ Fawn ☐ &lt; 3 yr Adult</td>
<td>Unknown</td>
</tr>
<tr>
<td>☐ Female</td>
<td>☐ Yearling ☐ &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>■ Unknown</td>
<td></td>
<td>Notes: Unknown age class</td>
</tr>
</tbody>
</table>

**Location (see map below):** Mile Marker 31

**How did deer enter the project area?***: Unknown, probably crossed US 1 Guard.

**How was deer removed from project area:** Officers herded deer across US 1 Guard.

*If unsure about the entry or exit, please note. Feel free to speculate.

At 5:50 I was informed of a deer located within the fence on US 1. During my drive to the location, I received a call that the deer was herded out of the area. I talked to the officer who said that the deer “walked right across the guard”.

![Map of the area showing key locations like US 1 Guard, North Underpass, Beach Road Guard, Outward Bound Guard, and South Underpass.]
**KEY DEER US 1 CROSSING PROJECT** Incident Report # 38

<table>
<thead>
<tr>
<th>Observer: Schmidt, Jason</th>
<th>Date: 10/25/06</th>
<th>Time: 0830</th>
</tr>
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<tbody>
<tr>
<td><strong>Sex:</strong> Male</td>
<td><strong>Age:</strong> Fawn</td>
<td><strong>Tattoo/Collar/Ear Tag:</strong> Unknown/No/No</td>
</tr>
<tr>
<td>Female</td>
<td>&lt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>Yearling</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>&gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
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</table>

**Location (see map below):** South of South Underpass, east side

**How did deer enter the project area?**: Unknown, probably crossed Long Beach Guard.

**How was deer removed from project area**: Opened gate by underpass and herded it through.

*If unsure about the entry or exit, please note. Feel free to speculate.*

Unknown entry location, probably Long Beach. When first spotted, deer was running north on east side of road towards south underpass.

![Location/Movement in the fence](image)
KEY DEER US 1 CROSSING PROJECT Incident Report # 39

<table>
<thead>
<tr>
<th>Observer: Schmidt, Jason</th>
<th>Date: 11/22/06</th>
<th>Time: 0820</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Sex</th>
<th>Age</th>
<th>Tattoo/Collar/Ear Tag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Fawn, &lt; 3 yr Adult</td>
<td>Unknown/No/No</td>
</tr>
<tr>
<td>Female</td>
<td>Yearling, &gt; 3 yr Adult</td>
<td>Unknown/No/No</td>
</tr>
<tr>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Unknown

| Location (see map below): South Underpass, eastern side, in northern “chute”. |
| How did deer enter the project area?*: Unknown. |
| How was deer removed from project area: Opened gate by underpass and herded it through. |

*If unsure about the entry or exit, please note. Feel free to speculate.

Unknown entry location. When first spotted, deer was already in “chute”.

* Location/Movement in the fence
  Exit direction
  Mortality location
**KEY DEER US 1 CROSSING PROJECT Incident Report # 40**

<table>
<thead>
<tr>
<th>Observer: Paul Stevko</th>
<th>Date: 12/27/06</th>
<th>Time: 1830</th>
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<tbody>
<tr>
<td><strong>Sex:</strong></td>
<td><strong>Age:</strong></td>
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<td>• Male</td>
<td>• Fawn</td>
<td>Unknown/No/No</td>
</tr>
<tr>
<td>• Female</td>
<td>• Yearling</td>
<td></td>
</tr>
<tr>
<td>• Unknown</td>
<td>• &gt; 3 yr Adult</td>
<td></td>
</tr>
<tr>
<td>Notes:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Location (see map below):** North of South Underpass

**How did deer enter the project area?**: Unknown.

**How was deer removed from project area**: Opened gate and herded it through.

*If unsure about the entry or exit, please note. Feel free to speculate.*

**Unknown entry location**