

I will post a pdf at the end of the presentation with some additional details and references so there is no need to try to copy it all.

The West End is a historic nest. Here's the photo of the 1929 West End Nest and then

http://i111.photobucket.com/albums/n133/sharpe_01/Catalina%20Eagles%20since%20Aug%202011/WEin1929.jpg

the same shot in 2011

http://i111.photobucket.com/albums/n133/sharpe_01/Catalina%20Eagles%20since%20Aug%202011/WEnestin2011.jpg

The West End nest elevation from Google Earth is a little over 300 feet.

Bald Eagles were common residents on the Channel Islands from before the turn of the century until at least 1950. In 1860 more than 30 immature eagles were seen in one location on Catalina Island. The last confirmed nesting of a bald eagle on the Channel Islands was in 1949 and eagles were considered extirpated from the islands by 1960.

The Institute for Wildlife Studies in cooperation with the United States Fish and Wildlife Service and California Department of Fish and Game, initiated a program to reintroduce bald eagles to Santa Catalina Island, California in 1980. Between 1980 and 1986, 33 eagles were released on the island from hacking platforms. Hacking Tower <http://eagleduo.com/eagles/figure3.jpg>

Many of these birds matured and formed breeding pairs on the island, but all the eggs produced broke in the nest. Eggs exhibited thinning of the shell that resulted in rapid water loss and a weakening of the eggshell. DDE levels in eggs removed from nests in 1987 and 1988 were twice as high as that which has been shown to cause complete reproductive failure indicating large amounts of DDE in the food chain.

Starting in 1989, the reintroduced population was maintained through manipulations of eggs and chicks at each nest site and through additional hacking of birds. An active program of manipulation and augmentation was the only way to maintain the Catalina Island bald eagle population at that time. In the egg manipulation process, artificial eggs were substituted for the eggs laid by the birds affected by DDE.

The adult eagles continued to incubate the artificial eggs while the removed eggs were relocated and artificially incubated at the Avian Conservation Center (ACC) at the San Francisco Zoo. Chicks that hatched from these removed eggs, or those produced by captive adults at the ACC or by wild birds, were then placed in the nests containing artificial eggs.

<http://eagleduo.com/eagles/figure4.jpg>

Eggs from the Catalina nests were transported to the SF Zoo for incubation by truck, helicopter, and jet aircraft to get them to the zoo as quickly as possible to hatch with limited results.

Wray and Dianna were released together from the Sweetwater Hacktower in 1986 and may have thought they were sisters.

<http://eagleduo.com/sweetwatertower.jpg> IWS Began using wing tags in 1981, but Wray and Dianna were not given them for some reason. All birds through 1989 were also named.

Wray and Shenandoah (released in 1981) began nesting in 1991. Dianna joined in 1992 to form the trio.

Shenandoah was originally marked K-03. He was recaptured sometime between 1985 and 1995 and given new markers as K-77. Dianna was trapped on 6/20/97 and given wing markers K-69. Wray was never captured.

18 chicks fledged from nest 1991-2005 Shenandoah's years - 18 chicks fledged from 2006-2013 Superman's years

Nesting History:

Shenandoah (K77), Wray, and then Dianna (K69)

1991: Hatched a healthy egg from Frenchman Lake, Plumas County, CA that was placed in the nest (K13).

1992: Dianna joined the nest. 1 egg was removed from the nest and hatched at the SF Zoo. The chick was fostered to the Pinnacle Rock nest (K25). The trio raised and fledged a foster chick from Dusty Territory, Lake Britton, Shasta, County, CA (K24). K-25 became the male parent on the Seal Rocks nest in **1999**.

1993: Raised a foster chick from a donor nest at Hagen Flat (K31)

1994: Raised a foster chick from the SF Zoo (K94). It was found near Arvin, CA on January 24, 2000 with a gunshot to the right wing. A portion of the wing was amputated and the eagle was moved to the San Francisco Zoo in March 2000. It became a part of the Eagle Island exhibit.

1995: Viable egg put in the nest on 20 April. The nest was abandoned 22 April after an adult flew off with what might have been a dead chick.

1996: 2 chicks were fostered into the nest. At banding, one was removed with a leg injury (K66) on 3 June. It was replaced with a 3rd chick on 6 June. Both fledged (K62 and K68, respectively).

1997: The same nest in the West End territory had been active each year since 1991, but was not used this year, although three adult eagles were observed in the area throughout the season.

1997 Dr. Sharpe took over as director of the eagle restoration program from founder and IWS President David K Garcelon.

1998: Raised foster chicks (K80) and (K81) from the SF Zoo. 1 chick hatched from an egg removed from the nest and was fostered to the Pinnacle Rock nest (K82). K-80 became the male parent at the Rattlesnake nest in **2008**. K-81 became the male parent of the Two Harbors nest in **2003**. K-82 became the female parent of the Two Harbors nest in **2003**.

1999: Raised foster chick (K91) from SF Zoo

2000: Raised two foster chicks (K02 and K03) from SF Zoo. K-02 became the female parent at the Lake Hemet nest on the southern California mainland in **2006**.

2001: At the West End nest a video camera was present (set up prior to breeding season) that allowed close observations of nesting activity. Raised two foster chicks from the SF Zoo (K11) and a banded only chick (found dead on 16 July). K-11 became the male parent at the Grasslands nest on Santa Cruz in **2006**.

2002: Raised two foster chicks (K26 from a SF Zoo egg and K27 from their own egg hatched at the Zoo). K-26 became the female parent of the Pelican Harbor nest on Santa Cruz in **2006** and had the first natural hatch on the Channel Islands since 1949.

<http://eagleduo.com/eagles/figure2.jpg>

2003: Raised foster chick (K35) from SF Zoo. "We located the bird several times per week until it left the island around 22 August. It was reported near Yachats, OR on 10 September".

2004: Raised foster chick from the SF Zoo (K45) and 1 egg removed from the nest was hatched at the Zoo and fostered to the Twin Rocks nest (K42). "We located K-45 several times per week until it left the island around 19 August. The bird was reported near Roseburg, Oregon on 29 September".

In the winter 2004/2005 IWS established an incubation facility at the office in Avalon, California.

<http://eagleduo.com/eagles/c2005figure3.jpg> Figure 3. Incubation facility with Brinsea incubator (left), Brinsea hatcher (center), and Grumbach incubator (right). Hatching success increased dramatically. It was last used in 2008.

2005: 2 fertile eggs and 2 infertile eggs were removed, so probably Dianna's first year of laying eggs. 1 egg hatched and the chick was fostered back in to the nest (K54).

2005 was the last year eaglets were obtained from the SF Zoo.

Shenandoah (K77) disappeared during the fall of 2005.

Superman (K01), Wray and Dianna (K69) years (2006-2007)

2006: K01 showed up during spring 2006, apparently after eggs were laid because they were infertile. 2 eggs were removed and both were infertile. Chick hatched from a Twin Rocks egg fostered into the nest. It was found with broken leg at banding. It was released on Santa Cruz after rehab (A61).

2007: Fostered three chicks hatched from their own eggs (K72, K73, K74). 5 fertile eggs were laid and 3 hatched.
<http://i104.photobucket.com/albums/m190/cdn-cdn/5eggsWE.png> K-73 became the male parent at the Pinnacle Rock nest in **2012**. <http://i104.photobucket.com/albums/m190/cdn-cdn/set3parents3chicks.png>

2008: Fostered a chick that hatched from one of their own eggs in the incubator (K65) and one chick that hatched naturally (K67).
https://lh3.googleusercontent.com/-tQZ5UEizLi0/Vorwu6ZUHGI/AAAAAAAAAEq0/6Juzolo1vfAlbgUQkvWDkevROmRKhi_xgCCo/s471-1c42/Picture%2B4.png
Picture of the West End Chicks on April 19, 2008. The chick on the right hatched in the nest and the chick on the left was hatched in the IWS incubation facility.

2009: Two naturally hatched chicks (K97 and K98). K-97 became the female parent at Lake Casitas near Ojai, Ca in **2015**.

2010: Two naturally hatched chicks (K07 and K08). K01 disappeared for a while in late 2010 through early 2011. This was the only time he has been absent from the territory. He may have been injured or sick during that period.

2012: Three naturally hatched chicks (K24, K27, and 5Z)

2013: Three naturally hatched chicks (K27, K28, and K29). Wray disappeared in October.

2014: SM (K01) was with (K87) who was then was deposed by (K91). They are sisters from the Two Harbors nest. No eggs laid.

Superman (K01) and Thunder (K91)

2015: First year of SM (K01) and Thunder (K91) 2 eggs laid. 1 egg broke and 1 chick hatched but died at banding due to acute septicemia.

2016: 2 eggs laid and 2 eggs hatched.

Video of the original West End trio Shenandoah (K77), Wray, and Dianna (K69)

<https://www.youtube.com/watch?v=xpyqwgkokU&feature=youtu.be>

<http://eagleduo.com/westendelfinal.pdf>

The End

U.S. Fish & Wildlife Service News Release on the San Francisco Zoo Bald Eagle Breeding Program that produced many of the eagles that were placed on Catalina Island and on the Northern Islands.

<http://eagleduo.com/SanFranciscoZoo.pdf>

1998: Raised foster chicks (K80) K-80 became the male parent at the Rattlesnake nest.

http://z7.invisionfree.com/CHIL_EagleCAM/index.php?showtopic=1989&view=findpost&p=15778037

and (K81) K-81 became the male parent of the Two Harbors nest.

http://z7.invisionfree.com/CHIL_EagleCAM/index.php?showtopic=1989&view=findpost&p=15778037.

1 chick hatched from an egg removed from West End nest and was fostered to the Pinnacle Rock nest (K82). K-82 became the female parent of the Two Harbors nest.

http://z7.invisionfree.com/CHIL_EagleCAM/index.php?showtopic=1989&view=findpost&p=15778037

Class of 1998 Photographs <http://picasaweb.google.com/EagleMods/CatalinaClassOf1998>

Detailed entries from the Annual Reports

1998: West End Territory, The birds were first observed at the nest on 3 March and were confirmed to be incubating on 16 March. On 19 March we replaced two eggs with artificial eggs at 0800. One of the adults returned to the nest by 0807 and began incubating the artificial eggs.

Upon delivery of the eggs to the ACC, it was determined that both were fertile, but had lost substantial weight during the first 1-5 days of natural incubation. Healthy eagle eggs generally lose about 15% of their weight during the entire 35-day incubation period. Two ACC-produced chicks (K80) and (K81) were fostered into the West End nest on 27 April.

(K82) One of the West End eggs hatched on 24 April, the same day the third Pinnacle Rock nest was found. Because the chick from the West End egg was the youngest bird available, it was placed into the Pinnacle Rock nest instead of being returned to the West End nest. We continued monitoring the nest until the chicks fledged on or about 3 July.

2000: The birds were first observed at the nest on 8 February. Incubation behavior was first observed on 24 February and we replaced one egg with an artificial egg on 26 February. A second egg was seen in the nest on 2 March. This egg was not removed and broke on 7 March. There was no observed development in the egg upon delivery to the ACC.

One ACC-produced chick was fostered into the West End nest on 18 April. A second chick was fostered into the nest on 26 April.

On 29 May, we returned to the West End nest to install leg bands, transmitter, and wingmarkers on the chicks and to obtain blood samples. We continued monitoring the nest until the chicks fledged on or about 26 June.

2001: Incubation behavior was first observed on 14 February and we replaced two eggs with artificial eggs on 19 February. Only one of the eggs showed signs of development, but it did not hatch.

Two ACC-produced chicks were fostered into the West End nest on 3 April. On 15 May, we returned to the nest to install leg bands, transmitters, and wingmarkers on the chicks and to obtain blood samples. We continued monitoring the nest until the chicks fledged between 12 and 17 June.

2002: Incubation behavior was first observed on 14 February and we replaced three eggs with artificial eggs on 18 February. All three eggs were fertile, but only one of the eggs hatched. Another egg was seen in the nest on 24 February, but we did not remove this egg and it broke within 2 weeks.

One ACC-produced chick and the chick that hatched from the West End egg were fostered into the West End nest on 31 March. On 18 May, we returned to the nest to install leg bands, transmitters, and wingmarkers on the chicks and to obtain blood samples. We continued monitoring the nest until the chicks fledged between 11 and 14 June.

2003: Nest construction was first observed on 30 January and continued until an egg was observed on 16 February. We entered the nest on 18 February and removed two fertile eggs. Neither egg hatched after incubation at the Zoo.

One ACC-produced chick was fostered into the West End nest on 8 April. On 31 May, we returned to the nest to install leg bands, transmitters, and wingmarkers on the chick and to obtain a blood sample. We continued monitoring the nest until the chick fledged on 20 June. We located the bird several times per week until it left the island around 22 August. It was reported near Yachats, OR on 10 September.

2004: New nest material was first observed at the nest on 27 January and the first egg was seen on 19 February. On 23 February, a second egg was observed in the nest, and we observed the original female of the trio laying a third egg around 1400 hrs on the same day. We entered the nest on 24 February and removed three fertile eggs, replacing them with two artificial eggs. One egg hatched after incubation at the ACC.

By 4 March, only one of the artificial eggs remained in the nest. At 0945 hrs on 22 March there were no eggs visible in the nest and one of the adults was observed standing on the side of the nest for more than an hour. We entered the nest at 1224 hrs and could find no eggs. We placed two more artificial eggs in the nest and an adult returned at 1239 hrs and began incubating them.

One ACC-produced chick was fostered into the nest on 15 April. On 27 May, we returned to the nest to install leg bands, transmitters, and wingmarkers on the chick and to obtain a blood sample. We continued monitoring the nest until the chick fledged on 26 June. We located the bird several times per week until it left the island around 19 August. The bird was reported near Roseburg, Oregon on 29 September.

2005: We observed Female 1 copulate with the male at the nest on 8 February. Birds were seen at the nest regularly, but rainy weather in mid-February restricted access to view the nest directly and we lost the video feed from the nest on 21 February. On 23 February we were able to view the nest and found one of the birds in incubation posture.

We entered the nest on 27 February and removed four eggs, two fertile and two infertile, replacing them with artificial eggs. One egg hatched on 4 April (see below) and was fostered back into the nest on 10 April. On 27 May, we returned to the nest to install a leg band, transmitter, and wingmarkers on the chick and to obtain a blood sample.

We continued monitoring the nest until the chick fledged around 5 July. We continued to monitor the fledgling and it remained on the island through the end of December.

2006: This nest was monitored primarily via our live web cam and birds were regularly seen at the nest throughout February. On 26 February we detected the first egg in the nest. We entered the nest on 2 March and removed two eggs, both of which were infertile, replacing them with artificial eggs. On 3 April we fostered the second chick that hatched from the Twin Rocks eggs into the nest.

We returned to the nest on 23 May to band the bird, but found that it had a fractured right leg. The eaglet was removed and transported to the Orange County Birds of Prey Center for veterinary care. The leg was repaired and the eaglet was eventually transported to Santa Cruz Island to be released from a hacking tower as part of our Northern Channel Islands bald eagle restoration program.

2007: This nest was monitored primarily via our live web cam and birds were regularly seen at the nest throughout February. On 20 February we detected the first egg in the nest. A second, third, and fourth egg were seen in the nest on 23, 25, and 27 February. We entered the nest on 28 February and removed five eggs that were laid in two separate nest bowls.

Although both females were actively incubating, we left only two artificial eggs in a single bowl. All five eggs were fertile, but only three hatched. On 8 April we fostered the three chicks that hatched from the West End eggs into the nest. We returned to the nest on 27 May and equipped the eaglets with leg bands, transmitters, and wingmarkers and obtained blood samples. We continued to monitor the birds at the nest until the eaglets fledged around 25 June. All three eaglets left the island over the next two months. K-72 was last seen on Catalina Island on 24 August. K-73 left the island around 1 August and was seen in Mendicino County, California on 12 August. K-74 was last seen on the island on 27 July.

The West End Chicks at the time of fostering on April 19, 2008. The chick on the right hatched in the nest and the chick on the left was hatched in the IWS incubation facility.
https://lh3.googleusercontent.com/-tQZ5UEizLi0/Vorwu6ZUHGI/AAAAAAAAAEq0/6Juzolo1vfAlbgUQkvWDkevROmRKhi_xgCCo/s471-1c42/Picture%2B4.png

2008: A second female, which had been breeding at the nest as part of a trio since 1992, was present in the territory until just before egg-laying. She was not seen again in 2008 and is presumed dead. This nest was monitored primarily via our live web cam and birds were regularly seen at the nest throughout February.

On 6 March we saw the first egg in the nest. We entered the nest on 13 March and removed two eggs, both of which were fertile. We were able to manually hatch one of the chicks on 15 April. On 18 April we saw a chick in the nest. The pair had produced at least one more egg after our egg switch and it had hatched among the artificial eggs.

On 19 April, we fostered the chick that had hatched in to the nest. We returned to the nest on 11 June to equip the birds with leg bands, transmitters, and wingmarkers, and to obtain blood samples. We continued to monitor the birds until they fledged on 11 July. One chick (K-65) fledged around 1415 hrs, but returned to the nest a short while later.

Around 1430 hrs a small plane flew close to the nest and caused both eaglets to jump off the nest. We traveled to the nest area to make sure the bird that had not fledged yet was healthy. The bird was found about 100 m from the nest underneath a thick cover of lemonade berry. We were able to capture the bird and carry it to an open area, where it was released and able to fly back towards the nest ridge.

We continued to monitor the young eagles until K-65 apparently left the island around 22 August and K-67 left in late October. We received no sighting reports of K-65, but K-67's signal was picked up regularly by a remote telemetry station on San Miguel Island. It is likely she spent the fall on Santa Rosa, where many young eagles can be found.

2009: Birds were regularly seen at the nest throughout February. The first egg was laid on 28 February and the second on 2 March. The eggs hatched on 7 and 8 April. We entered the nest on 5 June to equip the birds with leg bands, transmitters, and wingmarkers, and to obtain blood samples.

We continued to monitor the birds until they fledged between 2 and 8 July. K-97's transmitter malfunctioned while it was still in the nest, so we were unable to track the bird. Eagle K-98 was found dead on a beach at Camp Pendleton in southern California on 18 August.

2010: Birds were regularly seen at the nest throughout February. The first egg was laid on 8 March and the second on 12 March. The eggs hatched on 13 and 16 April. We entered the nest on 10 June to equip the birds with leg bands, transmitters, and wingmarkers, and to obtain blood samples.

We continued to monitor the birds until they fledged between 7 and 10 July. We got a mortality signal from one of the fledglings (K-08) coming from the direction of the mainland on 17 July. On 8 August, a fisherman found the other fledgling (K-07) dead in the ocean off the Palos Verdes Peninsula.

After the breeding season, K-01 disappeared from the territory. Starting on 14 September, male K-51, who had previously been on San Clemente Island, began spending time at the nest. He was seen at the nest with the female almost daily through the end of the year, so it appears that there will be a new male for the 2011 nesting season.

2011: K-01 had disappeared around 14 September 2010 and another male, K-51 had been seen at the nest throughout the fall/early winter. K-01 reappeared on 13 January and resumed his role as the breeding male. We monitored the nest primarily via our live web cam and birds were seen at the nest throughout February.

The first egg was laid on 23 February, a second on 26 February, and a third on 3 March. The eggs hatched on 3, 5, and 7 April, respectively. We entered the nest on 30 May to equip the birds with leg bands, transmitters, and wingmarkers, and to obtain blood samples. We continued to monitor the birds until they fledged between 30 June and 3 July.

All the fledglings remained on the island until mid-August. On 30 August K-14 was found dead floating between Anacapa and Santa Cruz. K-12 was seen and photographed in Alberta, Canada on 3 October and is known to have survived through the end of the year. We had no further sightings of K-13 after 17 August.

2012: Birds were seen at the nest throughout February. The first egg was laid on 18 February, a second on 22 February, and a third on 26 February. The eggs hatched on 29 March, 30 March, and 3 April, respectively.

We entered the nest on 25 May to equip the birds with leg bands, VHF transmitters, and wing markers, and to obtain blood samples. The last chick to hatch was too small to attach a transmitter or wing markers, so we attached an orange ACraft leg band (5/Z) in addition to the federal leg band. We continued to monitor the birds until they fledged between 25 June and 12 July.

K-24 got a fish hook stuck in its toe during the last few weeks in the nest, but the hook disappeared a week or two after fledging. He moved around the island, but was found dead at Cherry Cove along the northwest coast of Catalina on 6 September. K-27 left the island in mid-August and was seen on the Palos Verdes Peninsula on 15 August. She was found dead near Laporte, Saskatchewan Canada on 11 October. Eagle 5/Z was last confirmed alive on 4 August at the West End nest.

2013: Birds were seen at the nest throughout February. The first egg was laid on 22 February, a second egg was laid on 25 February, and a third was laid on 1 March. The first two chicks hatched on 4 April and the third hatched on 7 April. We entered the nest on 27 May to equip the birds with leg bands, VHF transmitters, and wing markers, and to obtain blood samples.

We continued to monitor the birds until they fledged between 29 June and 12 July (Table 1). K-27 was found struggling in the water below the nest on 4 August and was brought to Two Harbors. He was released back at the west end of the island and was last seen on the island on 9 September in the vicinity of the Seal Rocks territory.

K-28 was found swimming in Catalina Harbor near the Two Harbors nest on 29 July. She was uninjured, so we drove her back to the west end of the island and released her. She again was found in the water near the West End nest on 4 August, brought to Two Harbors for evaluation, and again released near the west end of the island.

She remained on the island through the end of the year and was seen on the West End nest multiple times via the nest cam. K-29 was found dead on Huntington State Beach, California, on 11 August. She was last seen alive in the Seal Rocks territory on 7 August.

The West End female appeared to have a leg or foot injury, perhaps a fish hook in her foot, in mid-August. We began placing bait at a potential trap site in early September and dropped food until 1 October, but she never visited the bait site. We observed her for several hours on 1 October, at which time she was putting all her weight on her injured leg/foot and fishing successfully. There were no other confirmed sightings of her through the end of the year.

Another female, K-87, hatched at the Two Harbors nest in 2009, began showing up at the nest in October and appears to have replaced the previous nesting female.

2014: The West End pair did not breed in 2014. The original female, who bred from 1991-2013, disappeared in late 2013. A new female, K-87 (a 2009 Two Harbors chick), was seen at the nest starting in October 2013 with the territorial male, K-01, but she was displaced by K-91, also a 2009 Two Harbors chick, in early April 2014.

Although females were present throughout the breeding season, no eggs were laid.

2015: The West End pair used the same nest that has been in use in the territory since 1991. The female was K-91, a 2009 Two Harbors chick, and the male was K-01, a bird produced at the San Francisco Zoo and fostered into the Pinnacle Rock nest in 2000. K-91 laid her first egg on 23 February and a second egg on 26 February. One chick hatched on 5 April.

We went to band the bird on 28 May, but the bird died suddenly about 30 seconds after being removed from the nest. We sent the bird to the California Department of Fish and Wildlife's Wildlife Investigation Laboratory in Rancho Cordova, California for a necropsy, the results of which were most consistent with acute septicemia.

[Channel Islands Report & Annual Reports 1997-2015](http://z7.invisionfree.com/CHIL_EagleCAM/index.php?showtopic=6299)
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Compiled and presented by MIBDave