Camp Pendleton Deer Report

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Agenda

- Camp Pendleton Deer Hunting
- How Deer Eat and Drink on Base
- Historic Management Practices
- Research Methods
- Recent Hunting Statistics
- Highlights/Lowlights for 2019
- Summary and Recommendations

What Pendleton Deer Eat

➤ Malcolm Pious' 1989 Humboldt State Graduate Thesis: Forage Composition and Physical Condition of Southern Mule Deer

➤ Pious examined rumens of 126 deer

➤ Deer consumed 54.2% browse, 21.6% forbs, 9.4% grass, 6.5% fruits/seeds, 8.3% other

➤ 42 different plant species identified

➤ Males ate more browse and less forbs

➤ Fawns and yearlings ate more forbs and less browse

➤ Perhaps males larger rumen and lower metabolism allowed for less nutritious browse

What Pendleton Deer Eat

➢ 21 species comprised bulk of diet:

- Browse: chamise, black sage, laurel-sumac, lemonade berry, white sage, coastal sagebrush, Engelmann oak, coastal live oak, flat top buckwheat, holly-leaf redberry, and toyon
- Forbs: filaree, monkey flower, lupine, bedstraw, wild cucumber, and sweet fennel
- Fruits: acorns

What Pendleton Deer Drink

➢ Michael Tucker's 2009 CSU San Marcos graduate thesis "Is Wildlife in Coastal Southern California Water Limited?"

➢ Used guzzlers and statistical analysis of landscape over 2 years to predict presence of deer and use of guzzlers

➢ Deer did not move in or out of an area based on the presence or absence of a guzzler

➢ Deer likely picked their range based on food availability and commuted to water

What Pendleton Deer Drink

➢ Deer visited guzzlers during the dry season, not during the wet season

➢ Initially, only 10% of guzzlers received visitation from deer

➢ Study indicated that deer would visit guzzlers 1 km away from creek beds and under 1500' in elevation

➢ Game Wardens and Sportsman's Club moved guzzlers and now all guzzler have received deer visitation.

Pendleton Deer Hunting

- Utilizes the G10 or California AO Tag
- 250 G10 tags issued annually
- "Military Only" hunt
- Effort controlled by Game Warden's office
- Ranked as 7 out of 107 zones in California in hunter satisfaction in CDFW 2014 poll
- Hunters "Very Satisfied" in poll, but feel deer population is "declining"

Historic Practices

➢ Deer hunting started in 1955 on base

➢ 2013 Biologist recommends limited effort to 600 hunter days

➢ 2014 Hunter effort limited to ~ 675 hunter days

➢ 2015 G10 tags reduced from 400 to 250

➢ 2016 Focus on spreading effort throughout base

➢ 2017 Season moved to November to allow for more hunting areas on holiday weekends

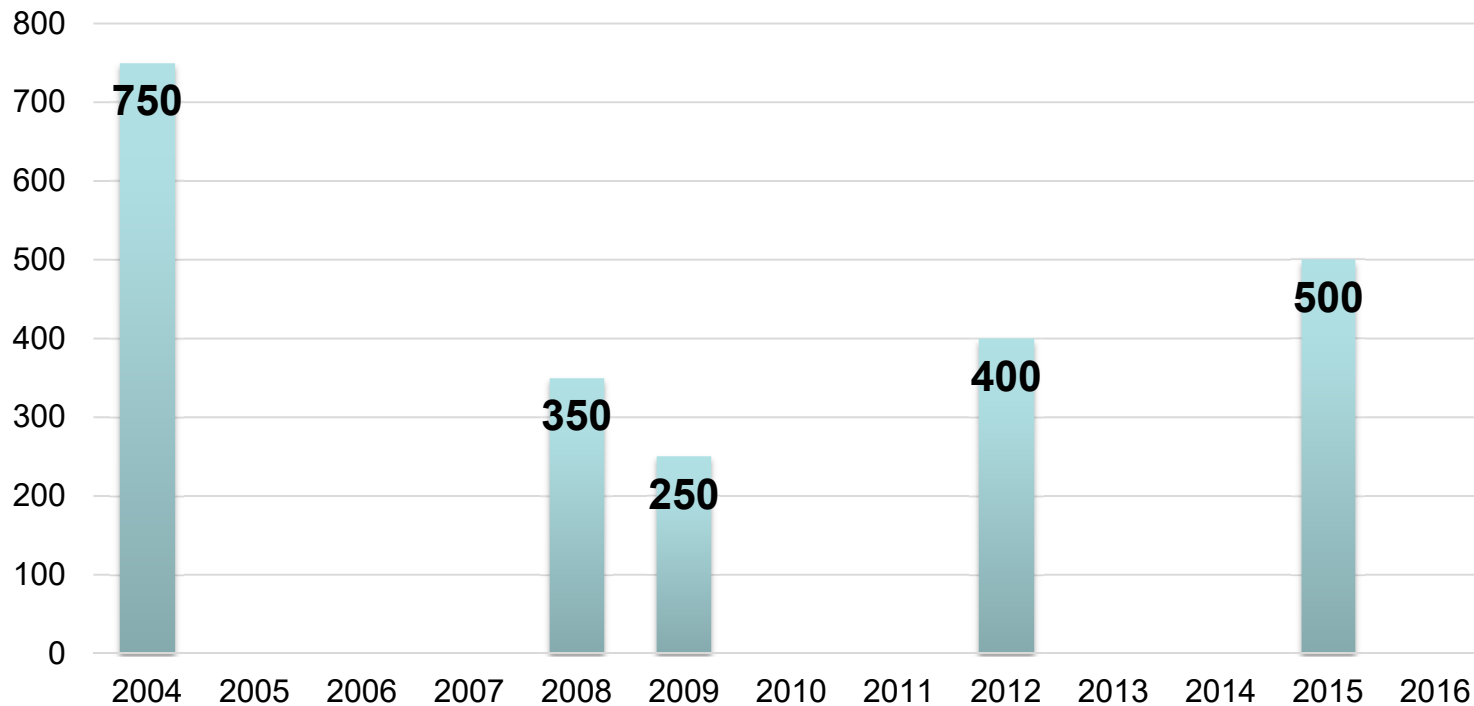➢ 2019 Muzzleloading season added (but not conducted due to fire danger rating

Helicopter Survey

- Low elevation helicopter surveys indicate a fluctuating herd
- Average size around 500 animals

Base deer population by year

Current Survey Techniques

➢ Helicopter survey hazardous, discontinued in 2016

➢ Base personnel struck a powerline in the helicopter in 2016 during survey (no injuries)

➢ UAVs: 2017-Present

➢ Deer Pellet DNA: 2017 (Volunteer Assisted)

➢ Cameras: Started in 2019, will continue annually

UAVs

- 2017 Shadow by USMC Reservists could not locate deer

- 2018 Reaper flown by USAF Reservists could locate motionless deer lying in brush from 14,000 ft (infrared)

- 2018 Puma flown by USMC Active Duty could locate deer spotted by Scouts, but not by itself

- 2019 Reaper conducted a scientific count of deer on Camp Pendleton

- 2019 Puma flown in cold ambient conditions could locate deer when flown at 300' AGL

UAV Future

➢ Use Puma for base wide survey and compare to Reaper results

➢ Present results at National Conference in 2020

Pellet Collection

➢ 2017 study collected deer pellets in India Training Area (25 square kilometer area)

➢ DNA analysis (using deer tag funds) showed 35 individual deer in the area

➢ Males had 1 square km range
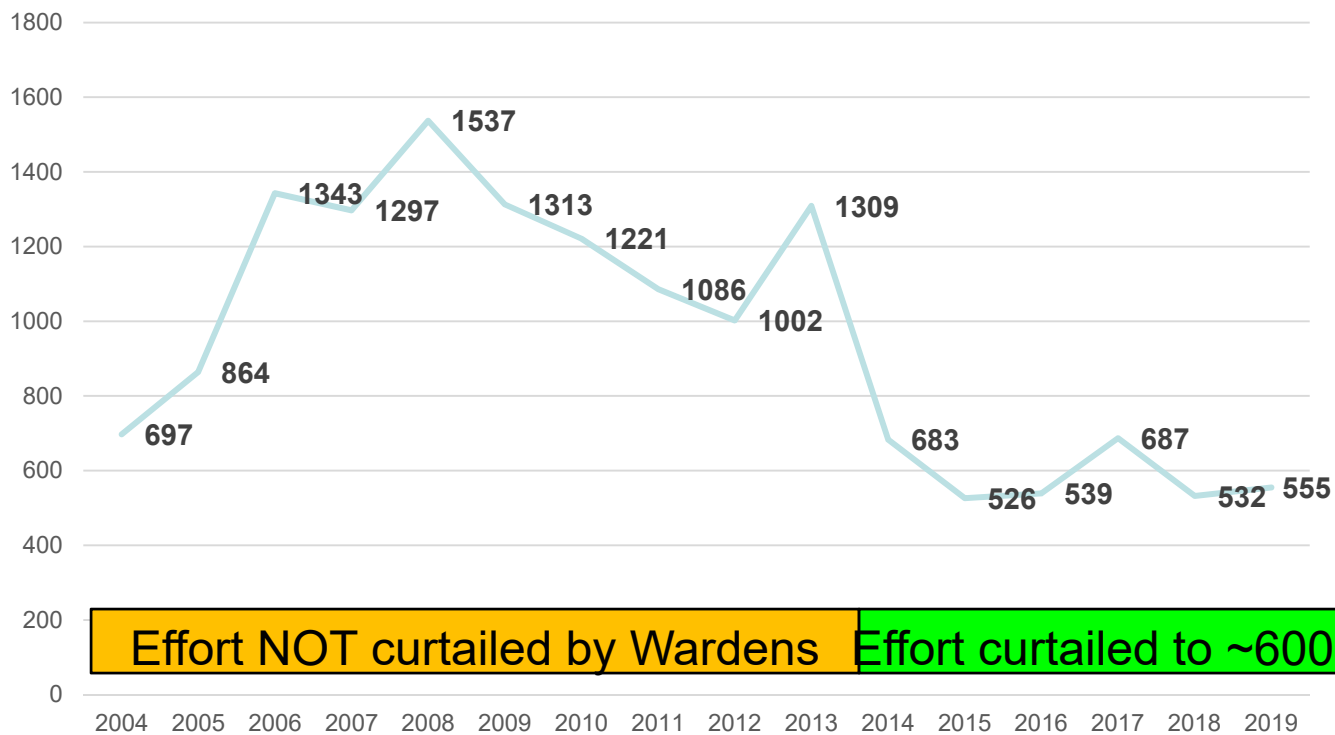
➢ Females had 2 square km range

Camera Study

➤ 2019 Camera study placed trail cameras in 50 locations randomly throughout the base

➤ Deer present throughout most of the base, but more heavily concentrated in certain sections

➤ Brand new information to help future survey techniques

➤ Perhaps deer avoid southern exposure

Deer Hunter Effort

- Effort fluctuated annually
- 2013 and prior hunters limited only by fires and area availability
- Effort intentionally reduced in 2014

Annual Firearm Hunter Effort in Hunter Days

Data points: 2004: 697, 2005: 864, 2006: 1343, 2007: 1297, 2008: 1537, 2009: 1313, 2010: 1221, 2011: 1086, 2012: 1002, 2013: 1309, 2014: 683, 2015: 526, 2016: 539, 2017: 687, 2018: 532, 2019: 555

Effort NOT curtailed by Wardens | Effort curtailed to ~600

Firearm Deer Harvest

- Harvest fluctuates each year
- Deer population fluctuations, hunting effort, and hunting area availability likely contribute to the peaks and valleys of this graph

Annual Firearm Hunter Harvest

Year	Harvest
2004	68
2005	89
2006	119
2007	109
2008	76
2009	85
2010	52
2011	81
2012	93
2013	120
2014	74
2015	55
2016	67
2017	58
2018	76
2019	53

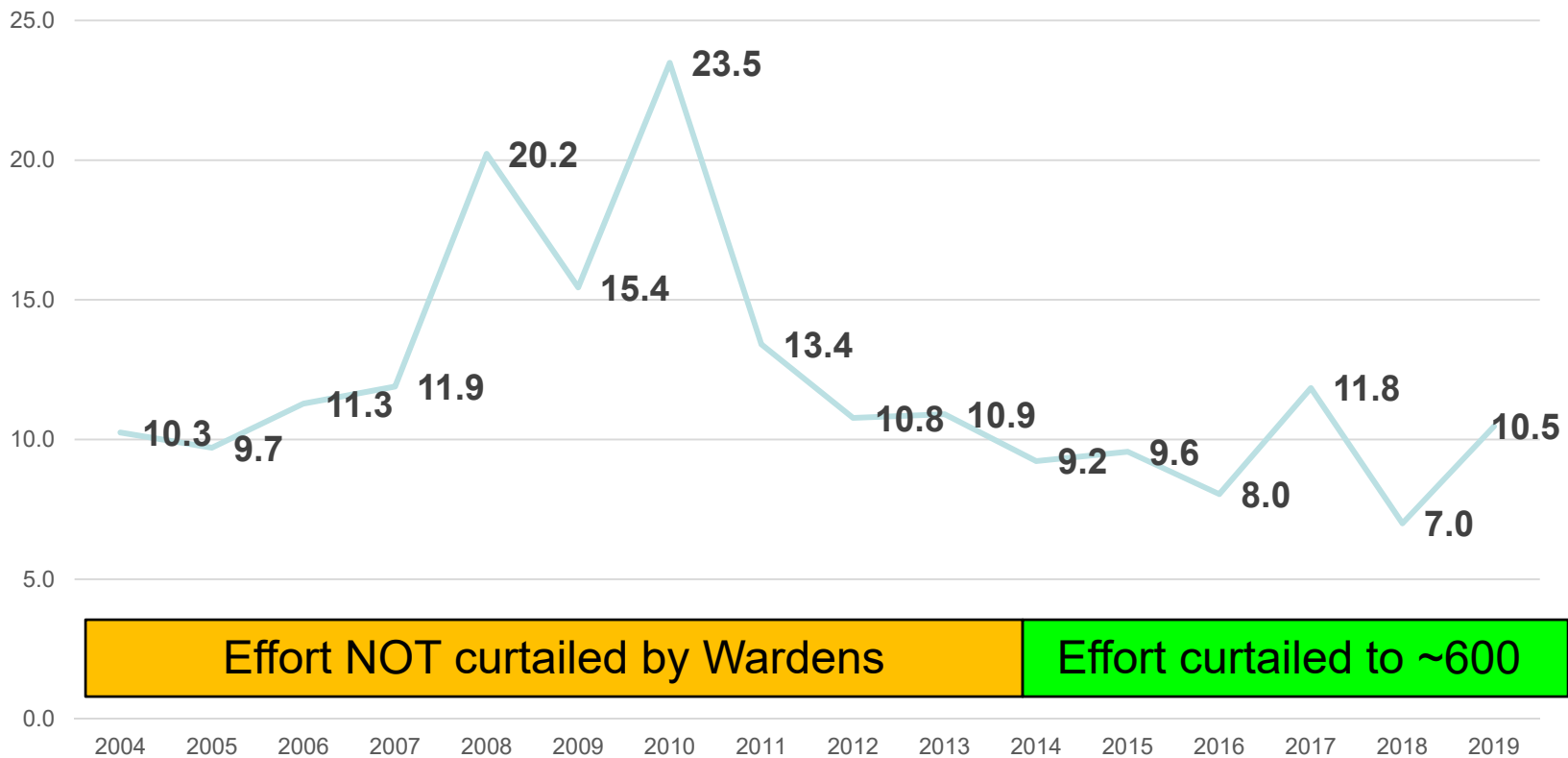Effort NOT curtailed by Wardens

Effort curtailed to ~600
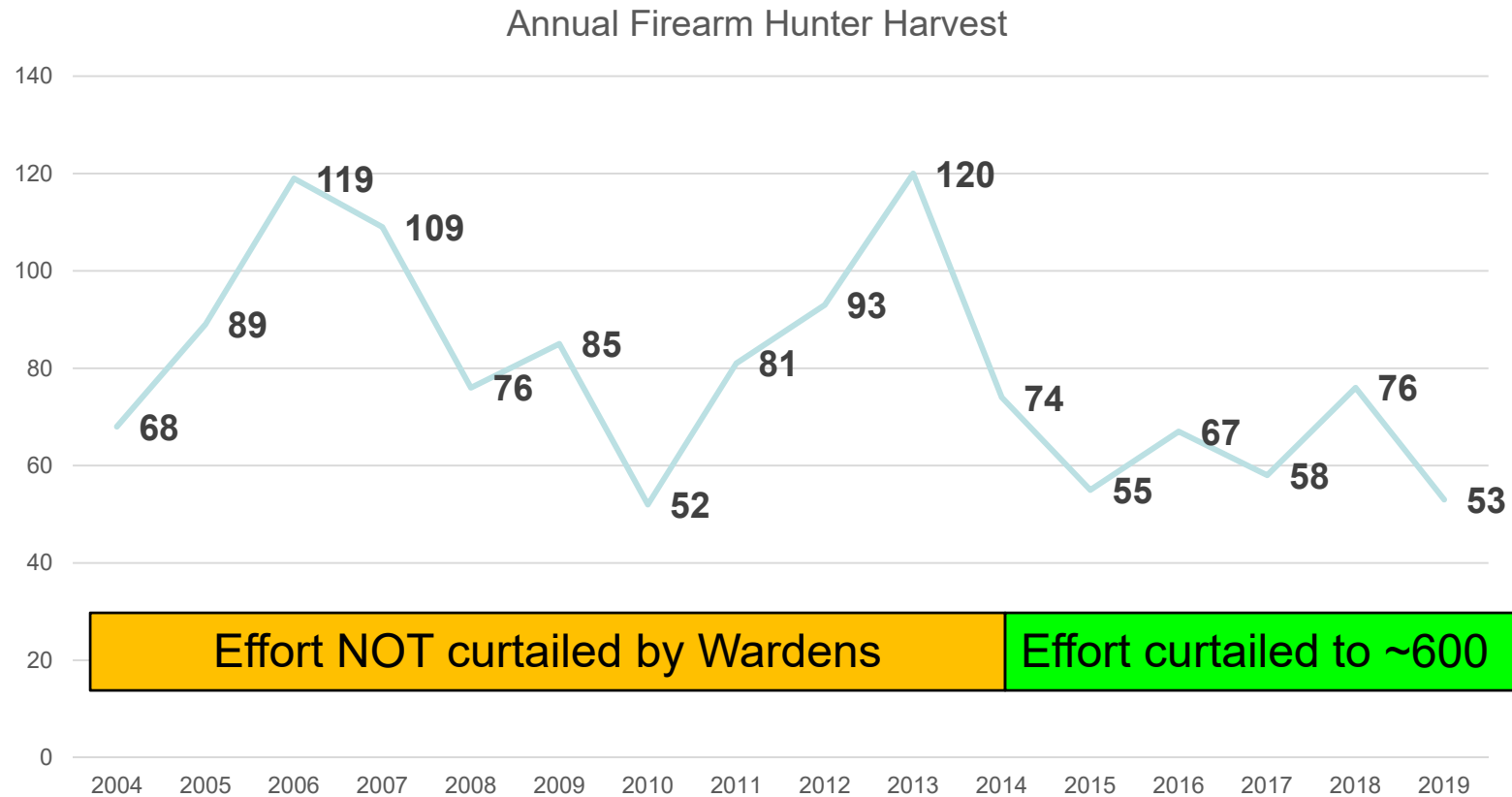
Hunter Productivity

- The rate of deer harvest varies annually, LOWER IS BETTER
- Average is 12.6 hunter days per deer

Hunter Productivity: # days hunted per deer harvest

Data points: 2004: 10.3, 2005: 9.7, 2006: 11.3, 2007: 11.9, 2008: 20.2, 2009: 15.4, 2010: 23.5, 2011: 13.4, 2012: 10.8, 2013: 10.9, 2014: 9.2, 2015: 9.6, 2016: 8.0, 2017: 11.8, 2018: 7.0, 2019: 10.5

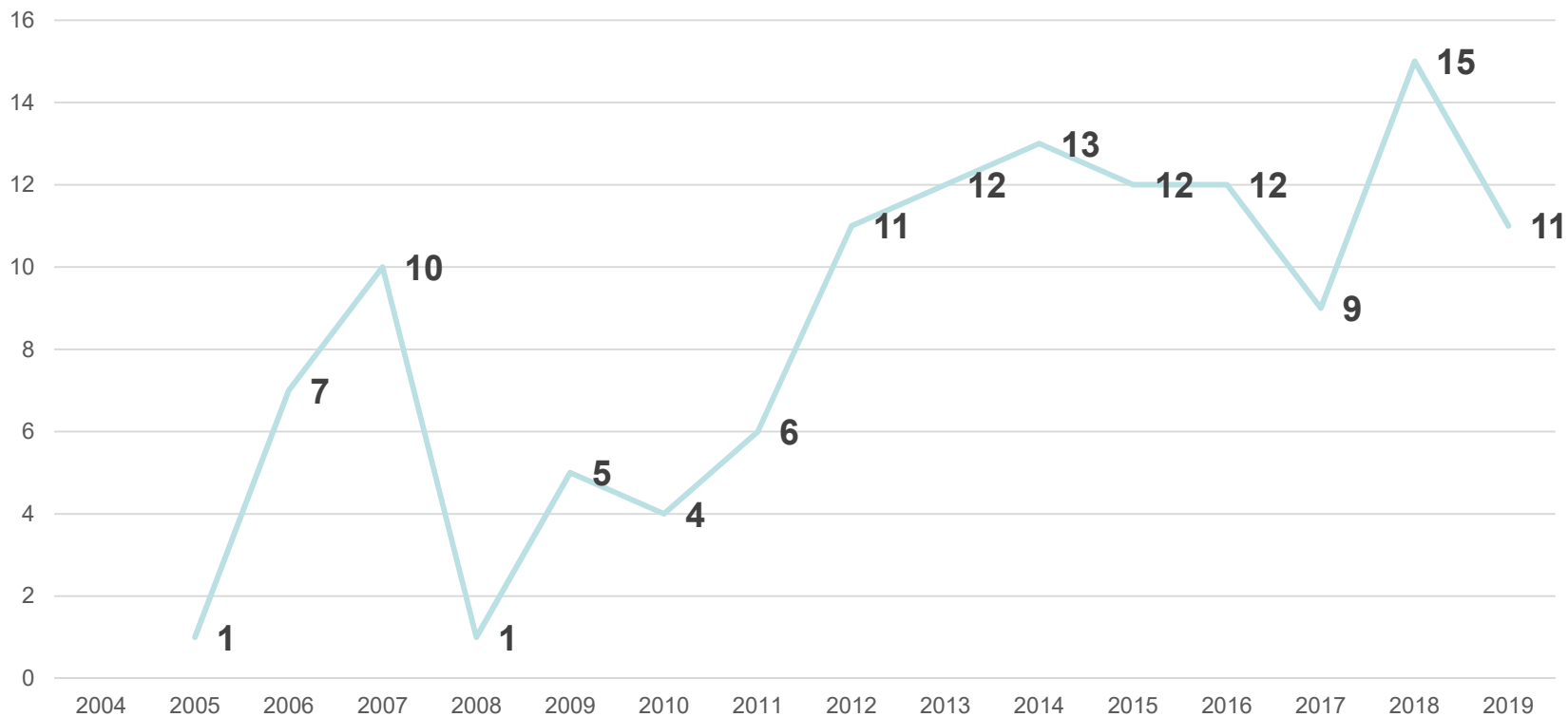Effort NOT curtailed by Wardens | Effort curtailed to ~600

Archery Harvest

- Record effort of about 900 archery hunts, many new archers
- Average harvest about 8 deer
- Archery effort not managed due to relatively low harvest numbers
- Inexperienced archers can maim deer, bowhunter courses coming in 2020
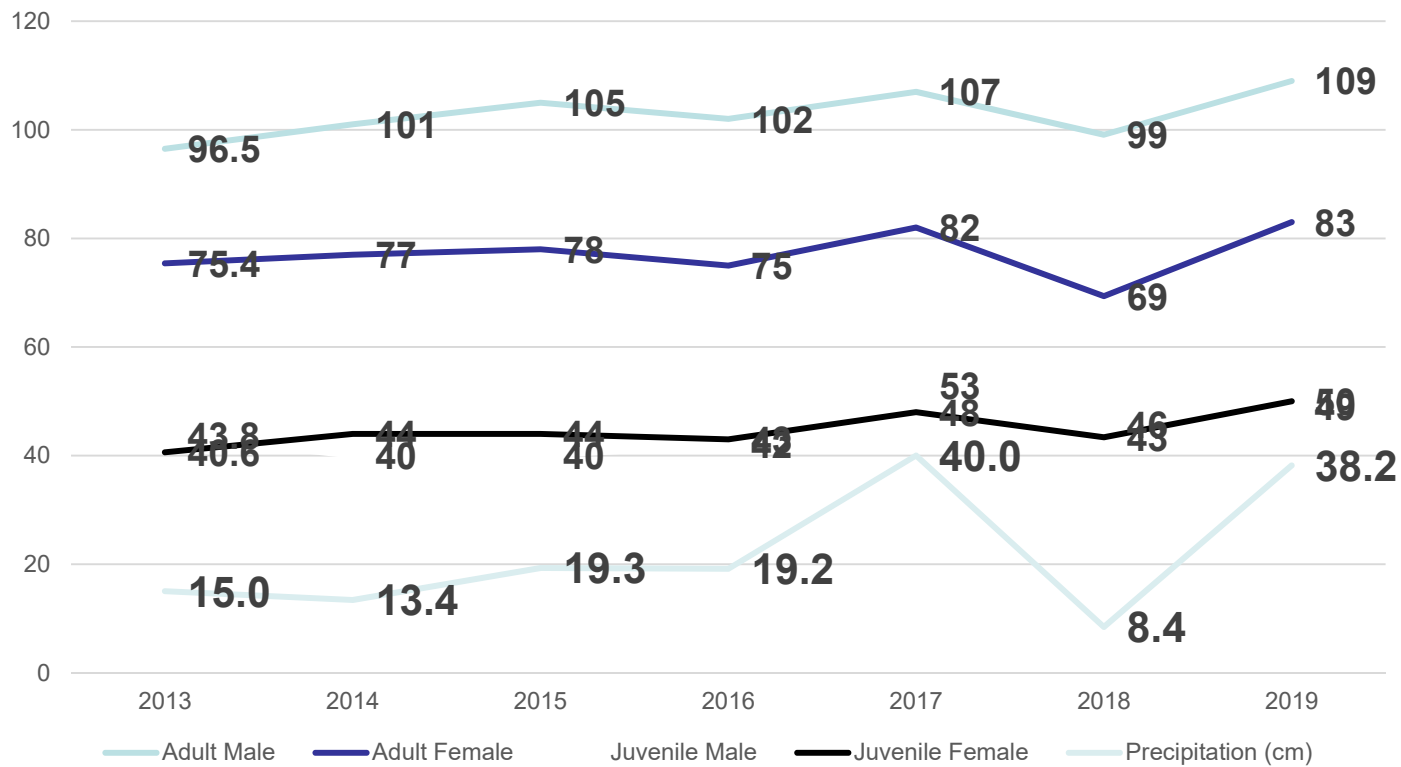
Archery Deer Harvested Annually

Dressed Deer Weights

- Precipitation may affect deer weights, more precipitation=more weight
- Doe weight fluctuates more than buck
- Doe fluctuations have reproductive implications (twins, fawn health)

Average Annual Deer Weights, field dressed by class (lbs) with Precipitation (cm) from Oct-Sep

Adult Male: 96.5, 101, 105, 102, 107, 99, 109

Adult Female: 75.4, 77, 78, 75, 82, 69, 83

Juvenile Male: 43.8, 44, 44, 42, 53, 46, 50

Juvenile Female: 40.6, 40, 40, 42, 48, 43, 49

Precipitation (cm): 15.0, 13.4, 19.3, 19.2, 40.0, 8.4, 38.2

Years: 2013, 2014, 2015, 2016, 2017, 2018, 2019

Legend: Adult Male, Adult Female, Juvenile Male, Juvenile Female, Precipitation (cm)
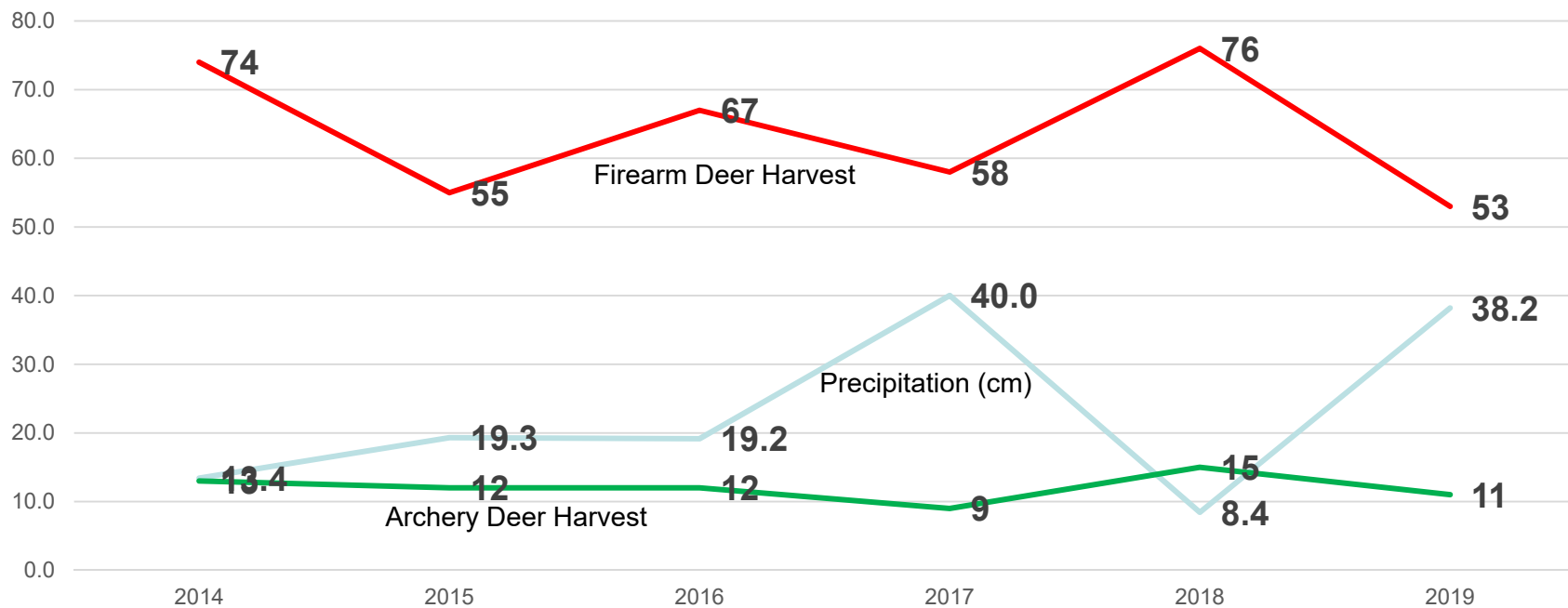
Last year's precipitation driving harvest?

- The last 3 years of precipitation have wildly fluctuated
- 2017 high rainfall followed by a 2018 rise in firearm/archery harvest
- 2018 low rainfall followed by a 2019 drop in firearm/archery harvest
- Will 2019s high rainfall mean a high harvest in 2020?
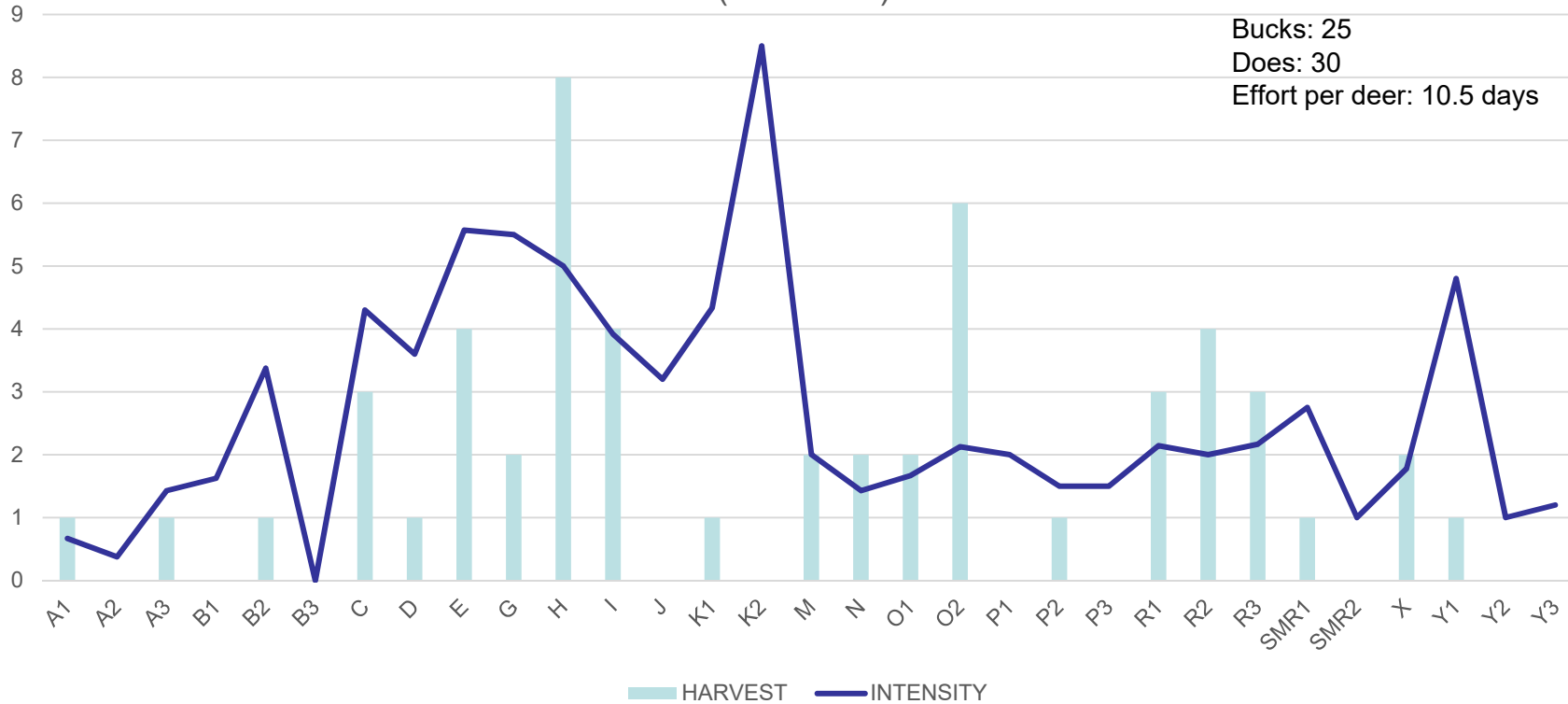
Precipitation and Harvest

Effort and Harvest by Area

- Historically productive Alphas, Papas, and Romeos under-hunted
- Intensity target between 3-4

2019 FIREARM DEER HUNTER INTENSITY AND HARVEST BY AREA (01DEC19)

Bucks: 25
Does: 30
Effort per deer: 10.5 days

HARVEST — INTENSITY

2018 Deer Hunting Lowlights

➢ Many areas with great deer habitat not hunted much due to muddy roads or military training, under-hunting

➢ Beginning of the firearm season very hot (90s) and very windy, this negatively affected deer harvest

➢ "Extreme" fire danger rating cancelled muzzleloading

➢ One illegal spike deer taken ($230 fine, deer hunting season over), donated to mountain lion research program for trapping/collaring in Southern California

➢ One hunter carried a bow in the field to help his spouse fill her tag after he already harvested a deer ($230 fine, cannot purchase deer tag in 37 states until 2021, base hunting suspended for one year)

2019 Deer Hunting Highlights

- ➢ Archery effort highest on record (900 archery hunts)
- ➢ Biggest deer in recent memory >10% jump in weight
- ➢ Over 1500 trips to the field for archery and firearm deer hunters without injury or training interference
- ➢ 5x5 buck taken last day of season
- ➢ Largest buck 154lbs field dressed
- ➢ Many big antlered deer, "King of the Mountain in R2"
- ➢ 25 Guzzlers provided water throughout the dry season, receiving 100 deer visits/day

2020 Deer Hunting

➢ If heavy rainfall continues:

  🌎 Deer weights/antlers will stay big

  🌎 Deer population will recover from 2018 drought

➢ Muzzleloading season will be planned around weather patterns

➢ New archery range at Las Flores and introduction of advanced archery course

Summary

➢ Camp Pendleton Deer Hunting appears
  - ⊕ SUSTAINABLE
  - ⊕ HIGH QUALITY

➢ The 2020 Hunt Will:
  - ⊕ Hunt 600 hunter days for firearm season
  - ⊕ Spread effort throughout base

➢ Measure 2018's precipitation effect on the 2020 harvest data