

Navel Orangeworm Pilot Project 2022 – Weekly Report

Weeks Ending – June 17 and June 24, 2022

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I. Project Updates

Navel Orangeworm Sterile Insect Technique

The Navel Orangeworm (NOW) Pilot Project (Project) utilizes NOW sterile insect technique (SIT) moths obtained from the United States Department of Agriculture (USDA) Phoenix, Arizona Rearing Facility. Quality Control (QC) tests are performed on every shipment of NOW SIT moths used for aerial releases.

Aerial releases for 2022 began on March 15, 2022, with one magazine of approximately 750,000 moths being released daily over Zones 1 and 3. A second magazine of approximately 750,000 moths began being released daily on May 28 over Zones 5 and 7 with regular releases being diverted to separate sites for research purposes.

From March 15 to April 4, aerial releases were conducted on the same day the magazines were received in California. Since April 6, aerial releases have been conducted the day after the magazines were received in California; meaning the magazines were kept overnight in cold-storage prior to being released the following morning. This change in the aerial release schedule was due to changes to the airline's flight schedule from Phoenix, AZ to Bakersfield, CA that the Program uses to ship magazines from the Phoenix Rearing Facility to the CDFA Shafter field office. This next-day aerial release schedule is anticipated to continue for the remainder of the season.

CDFA has conducted ground releases in lieu of aerial releases when release aircrafts were unavailable due to maintenance or repairs. In 2022, ground releases were conducted during the month of June and were limited to one magazine released at one zone per day, along the north and west edges of the zone. Ground releases occurred only at Zones 1 and 3 during weekdays, alternating the zones each day. No ground releases were conducted on weekends due to staff shortages.

Listed below are any circumstances which prevented or altered regular aerial releases in 2022:

- Saturday, March 19: No aerial release conducted due to severe weather conditions; magazine held an extra night in the cold room to be released the following day
- Sunday, March 20: Double release; today's magazine and magazine from previous day released
- Tuesday, March 22: Shipment of moths not transferred through airlines; this shipment was transferred next day
- Wednesday, March 23: Double release; today's magazine and magazine from previous day released
- Monday, March 28: No aerial release conducted due to severe weather conditions; magazine held an extra night in the cold room to be released the following day
- Tuesday, March 29: Double release; today's magazine and magazine from previous day released

- Tuesday, April 5: No aerial release conducted due to release schedule change from same-day release to next-day release
- Saturday, April 23: Shipment of moths not transferred through airlines; this shipment was destroyed
- Sunday, April 24: No aerial release due to shipment of moths not being transferred through airlines
- Saturday, April 30: Shipment of moths not transferred through airlines; this shipment was held overnight in Phoenix and shipped on May 1
- Sunday, May 1: No aerial release due to shipment of moths not being transferred through airlines
- Monday, May 2: Both shipments from April 30 and May 1 released
- Saturday, May 14: Shipment destroyed at rearing facility due to issue with irradiation
- Sunday, May 15: No aerial release due to issue with irradiation
- Monday, May 30 – Wednesday, June 8: No aerial releases due to issues with release aircrafts
- Thursday, June 9 – Friday, June 10: Ground releases conducted due to ongoing issues with release aircrafts; ground release conducted at Zone 1 on June 9 and at Zone 3 on June 10
- Saturday, June 11 – Sunday, June 12: No releases conducted due to lack of personnel needed to operate ground release equipment
- Monday, June 13 – Friday, June 17: Ground releases conducted due to ongoing issues with release aircrafts; ground release conducted at Zone 1 on June 13, 15, and 17; and at Zone 3 on June 14 and 16
- Saturday, June 18 – Sunday, June 19: No releases conducted due to lack of personnel needed to operate ground release equipment
- Monday, June 20: Aerial release conducted for one magazine only; shipments not sent through airlines due to issue at rearing facility
- Tuesday, June 21: No releases due to shipment of moths not being transferred through airlines

Navel Orangeworm Trapping

The NOW trapping program began May 5, 2020, with an Area Wide Project site that included a total of four orchards in Fresno County: two 640-acre almond orchards and two 640-acre pistachio orchards. On May 17, 2021, the Area Wide Project site expanded to include four additional orchards in Fresno County: one 640-acre almond orchard, one 640-acre pistachio orchard, one 160-acre almond orchard, and one 160-acre pistachio orchard. All eight orchards, designated as Zones 1 through 8, continue to be serviced on a weekly basis.

Listed below are any circumstances which prevented regular servicing in 2022:

- Week of January 7: No traps were serviced due to severe weather on site
- Week of January 14: No traps were serviced in Zones 1 – 4 due to staffing issues
- Week of February 25: No traps were serviced in Zone 1 due to pesticide applications on site

- Week of March 4: No traps were serviced in Zone 2 due to pesticide applications on site
- Week of March 11: Only 26 of the 72 traps were serviced in Zone 2 due to pesticide applications on site
- Week of April 1: Only Zones 3 and 4 were serviced this week due to severe weather on site
- Week of April 22: No traps were serviced in Zone 2 due to pesticide applications on site
- Week of May 20: No traps were serviced in Zone 4 due to pesticide applications on site
- Week of May 27: No traps were serviced in Zone 2 due to pesticide applications on site
- Week of June 10: No traps were serviced in Zone 4 due to staffing issues

II. Project Design

The NOW Area Wide Project site includes eight orchards located in Fresno County, identified as Zones 1 through 8. Listed below is information related to each orchard:

Zone #	Crop Type	Acres	Aerial SIT Release/Non-Release	Date Added to Area Wide Project
Zone 1	Pistachio	640	Release	May 5, 2020
Zone 2	Pistachio	640	Non-Release	May 5, 2020
Zone 3	Almond	640	Release	May 5, 2020
Zone 4	Almond	640	Non-Release	May 5, 2020
Zone 5	Pistachio	640	Release	May 17, 2021
Zone 6	Pistachio	160	Non-Release	May 17, 2021
Zone 7	Almond	640	Release	May 17, 2021
Zone 8	Almond	160	Non-Release	May 17, 2021

Each zone has a trap site ratio of approximately 1 trap site per 18 acres for a total of 36 trap sites for each 640-acre zone and 9 trap sites for each 160-acre zone. Trap sites include two traps: one trap baited with NOW pheromone/PPO lures and one trap baited with pistachio meal. All traps are serviced on a weekly basis. Servicing includes collecting trap bottoms and replacing with new trap bottoms. Bait/lure changes occur once a month, and trap tops are replaced as needed. Counts are performed on each trap collected to determine number of wild versus sterile captures and male versus female captures.

III. Trap Results for Weeks Ending on June 17 and June 24, 2022

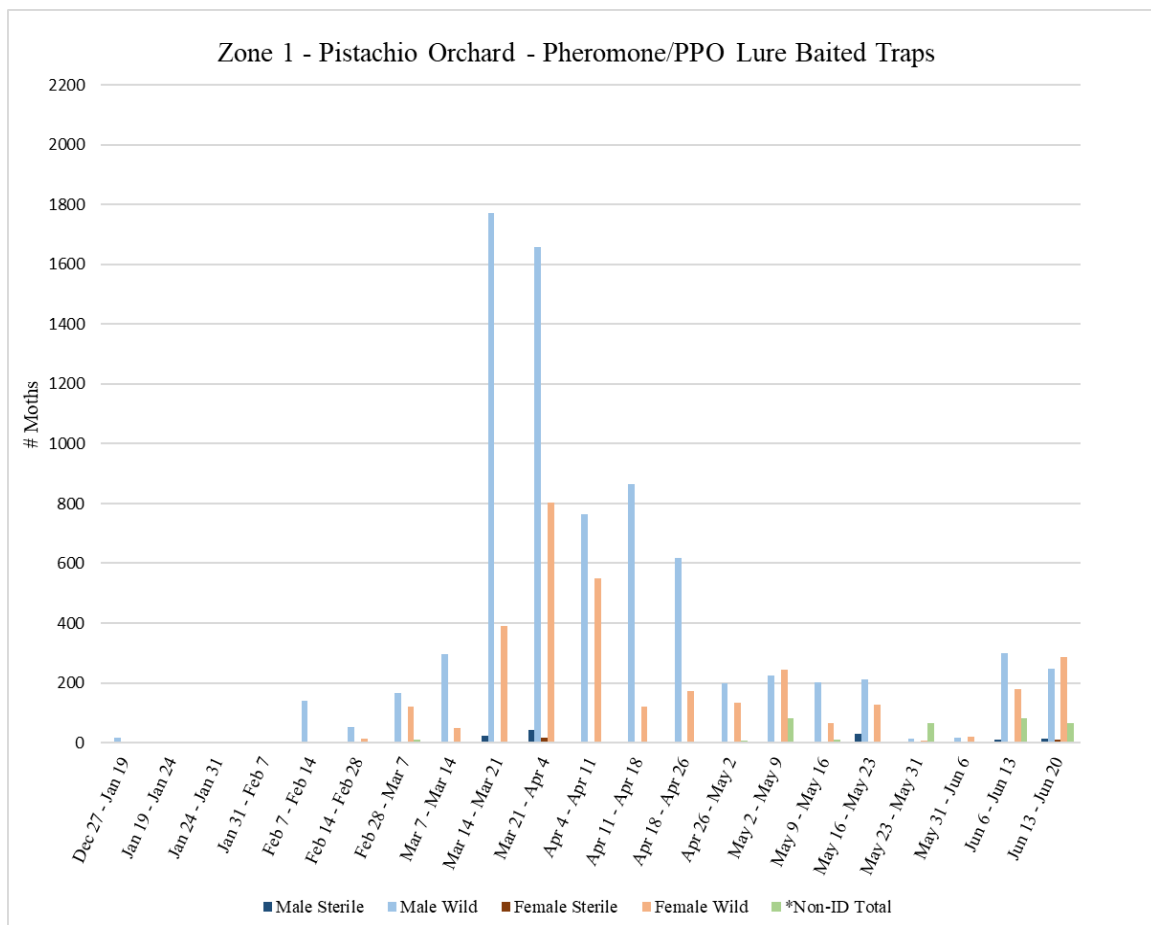
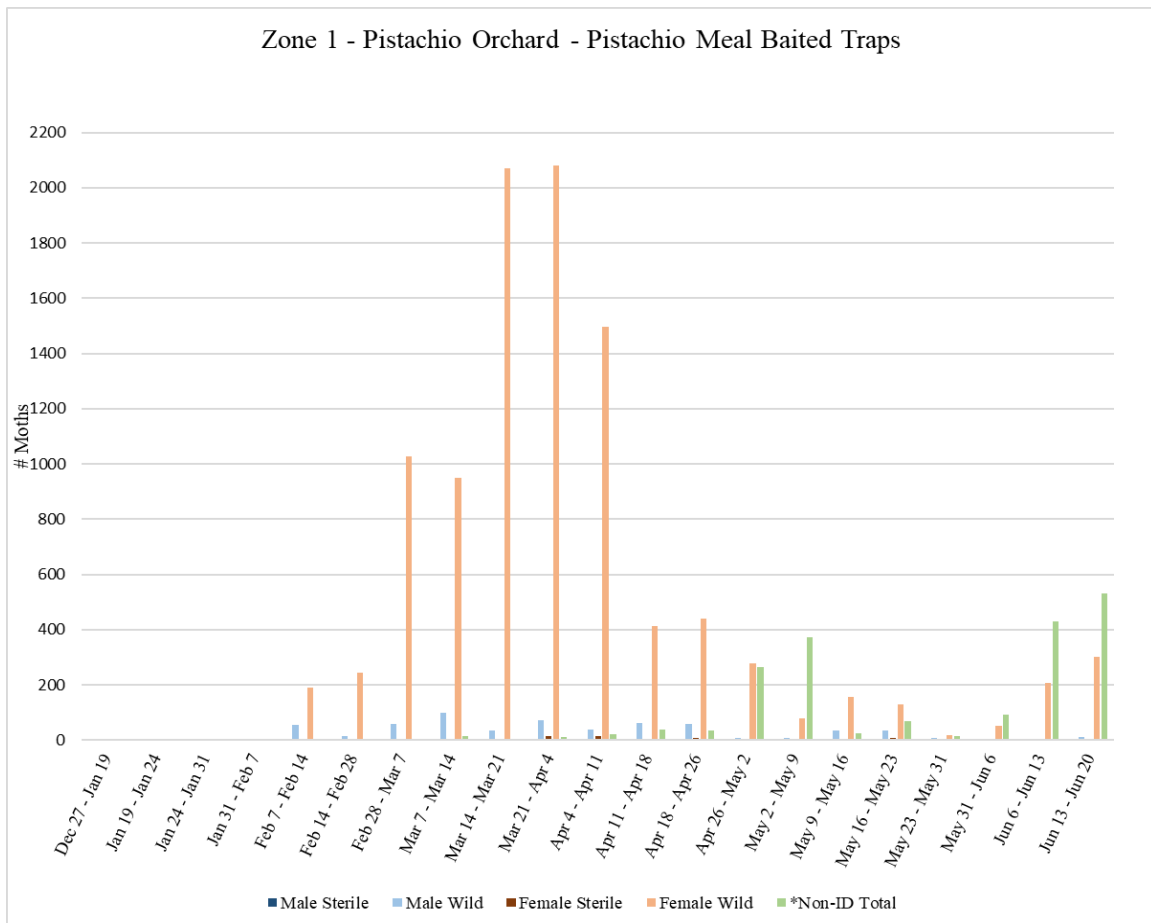
Zone 1

Zone 1 is a pistachio orchard where aerial NOW SIT releases are conducted. A total of **72** traps were collected from Zone 1 on Monday, June 13, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

A total of **72** traps were collected from Zone 1 on Monday, June 20, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

Zone 1 - Pistachio								
Pistachio Meal Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 27 - Jan 19	0	0	1	1	0	1	1	0
Jan 19 - Jan 24	0	0	0	0	0	0	0	0
Jan 24 - Jan 31	0	0	0	0	0	0	0	0
Jan 31 - Feb 7	0	0	0	0	0	0	0	0
Feb 7 - Feb 14	0	0	54	54	0	191	191	0
² Feb 14 - Feb 28	0	0	13	13	0	245	245	0
Feb 28 - Mar 7	0	0	57	57	0	1028	1028	0
Mar 7 - Mar 14	0	0	99	99	0	950	950	16
Mar 14 - Mar 21	7	0	36	36	0	2070	2070	0
³ Mar 21 - Apr 4	15	1	72	73	16	2079	2095	11
Apr 4 - Apr 11	7	3	37	40	16	1495	1511	20
Apr 11 - Apr 18	8	0	63	63	2	414	416	38
Apr 18 - Apr 26	8	0	57	57	7	438	445	36
Apr 26 - May 2	6	0	6	6	0	276	276	264
May 2 - May 9	8	0	9	9	0	78	78	373
May 9 - May 16	7	1	33	34	2	155	157	23
May 16 - May 23	8	1	36	37	8	129	137	67
May 23 - May 31	7	0	7	7	1	17	18	13
May 31 - Jun 6	0	2	3	5	0	52	52	92
Jun 6 - Jun 13	2	1	2	3	3	208	211	428
Jun 13 - Jun 20	4	4	12	16	2	301	303	530
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ 18 of the 36 traps in field since Dec 20; 18 of the 36 traps in field since Dec 27								
² Traps in field for two weeks								
³ Traps not serviced in Zone 1 during the week of Apr 1 due to severe weather on site								

Zone 1 - Pistachio								
Pheromone/PPO Lure Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 27 - Jan 19	0	0	15	15	0	0	0	0
Jan 19 - Jan 24	0	0	1	1	0	0	0	0
Jan 24 - Jan 31	0	0	3	3	0	0	0	0
Jan 31 - Feb 7	0	0	0	0	0	0	0	0
Feb 7 - Feb 14	0	0	139	139	0	4	4	0
² Feb 14 - Feb 28	0	0	52	52	0	12	12	1
Feb 28 - Mar 7	0	0	166	166	0	121	121	9
Mar 7 - Mar 14	0	0	297	297	0	48	48	2
Mar 14 - Mar 21	7	24	1772	1796	0	391	391	0
³ Mar 21 - Apr 4	15	44	1659	1703	16	803	819	4
Apr 4 - Apr 11	7	5	764	769	3	551	554	5
Apr 11 - Apr 18	8	3	866	869	2	120	122	0
Apr 18 - Apr 26	8	5	617	622	0	172	172	0
Apr 26 - May 2	6	5	199	204	0	134	134	7
May 2 - May 9	8	3	223	226	0	245	245	81
May 9 - May 16	7	4	202	206	0	64	64	11
May 16 - May 23	8	29	210	239	2	126	128	2
May 23 - May 31	7	0	12	12	0	7	7	65
May 31 - Jun 6	0	1	17	18	4	20	24	0
Jun 6 - Jun 13	2	9	300	309	2	178	180	82
Jun 13 - Jun 20	4	12	248	260	10	287	297	64
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ 18 of the 36 traps in field since Dec 20; 18 of the 36 traps in field since Dec 27								
² Traps in field for two weeks								
³ Traps not serviced in Zone 1 during the week of Apr 1 due to severe weather on site								



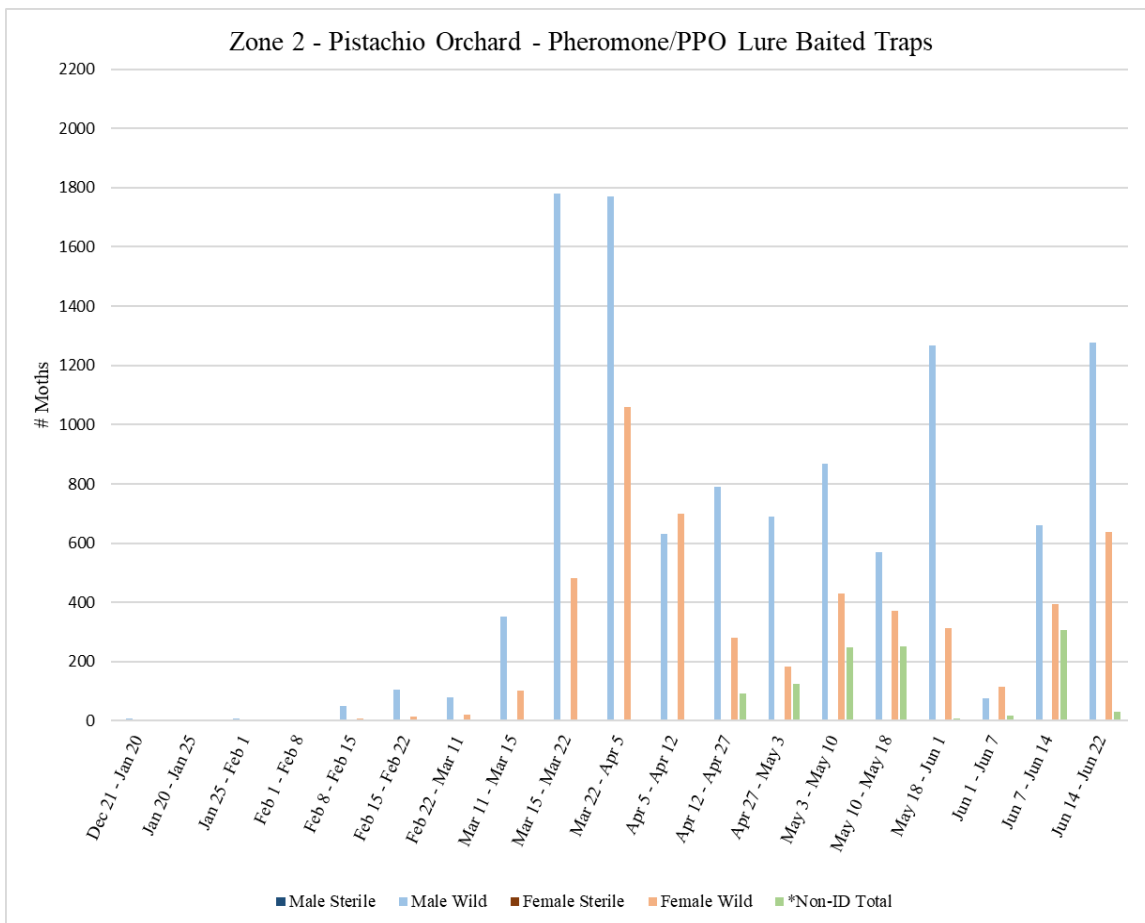
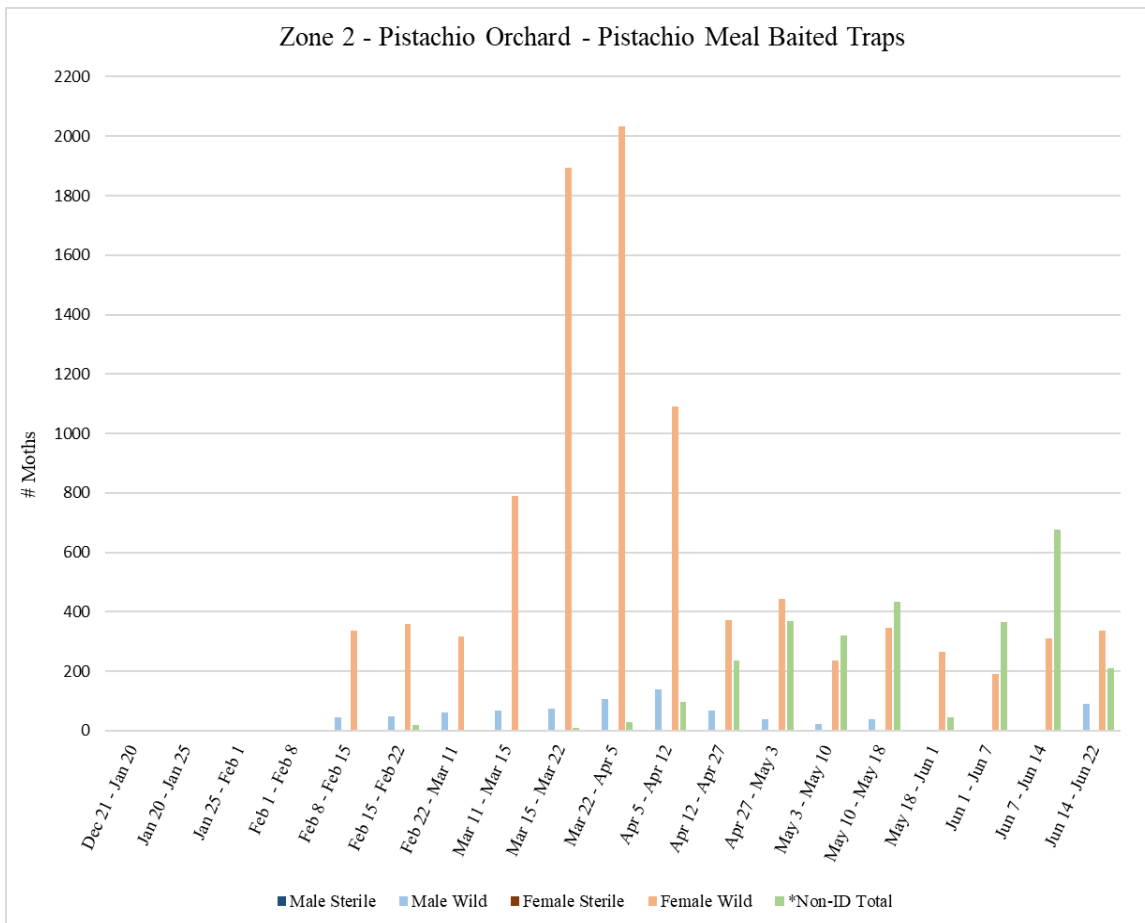
Zone 2

Zone 2 is a pistachio orchard where aerial NOW SIT releases are not conducted. A total of **72** traps were collected from Zone 2 on Tuesday, June 14, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

A total of **72** traps were collected from Zone 2 on Wednesday, June 22, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

Zone 2 - Pistachio								
Pistachio Meal Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 21 - Jan 20	0	0	0	0	0	2	2	0
Jan 20 - Jan 25	0	0	0	0	0	0	0	0
Jan 25 - Feb 1	0	0	0	0	0	0	0	0
Feb 1 - Feb 8	0	0	0	0	0	0	0	0
Feb 8 - Feb 15	0	0	45	45	0	335	335	0
Feb 15 - Feb 22	0	0	49	49	0	360	360	19
² Feb 22 - Mar 11	0	0	61	61	0	318	318	0
³ Mar 11 - Mar 15	0	0	69	69	0	790	790	0
Mar 15 - Mar 22	0	0	73	73	0	1893	1893	9
⁴ Mar 22 - Apr 5	0	0	106	106	0	2033	2033	27
Apr 5 - Apr 12	0	0	138	138	0	1091	1091	98
⁵ Apr 12 - Apr 27	0	0	69	69	0	373	373	236
Apr 27 - May 3	0	0	38	38	0	442	442	370
May 3 - May 10	0	0	21	21	0	237	237	320
May 10 - May 18	0	0	39	39	0	345	345	434
⁶ May 18 - Jun 1	0	0	1	1	0	265	265	45
Jun 1 - Jun 7	0	0	4	4	0	189	189	365
Jun 7 - Jun 14	0	0	3	3	0	309	309	677
Jun 14 - Jun 22	0	1	89	90	0	336	336	211
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/21								
² Only 13 of the 36 traps serviced this week due to pesticide applications on site								
³ 13 of the 36 traps in field since Mar 11; 23 of the 36 traps in field since Feb 22								
⁴ Traps not serviced in Zone 2 during the week of Apr 1 due to severe weather on site								
⁵ Traps not serviced in Zone 2 during the week of Apr 22 due to pesticide applications on site								
⁶ Traps not serviced in Zone 2 during the week of May 27 due to pesticide applications on site								

Zone 2 - Pistachio								
Pheromone/PPO Lure Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 21 - Jan 20	0	0	9	9	0	0	0	0
Jan 20 - Jan 25	0	0	3	3	0	0	0	0
Jan 25 - Feb 1	0	0	8	8	0	0	0	0
Feb 1 - Feb 8	0	0	3	3	0	0	0	0
Feb 8 - Feb 15	0	0	49	49	0	7	7	0
Feb 15 - Feb 22	0	0	106	106	0	15	15	0
² Feb 22 - Mar 11	0	0	80	80	0	20	20	0
³ Mar 11 - Mar 15	0	0	351	351	0	103	103	0
Mar 15 - Mar 22	0	0	1781	1781	0	483	483	0
⁴ Mar 22 - Apr 5	0	0	1771	1771	0	1061	1061	0
Apr 5 - Apr 12	0	0	631	631	0	699	699	1
⁵ Apr 12 - Apr 27	0	0	791	791	0	282	282	91
Apr 27 - May 3	0	0	689	689	0	184	184	124
May 3 - May 10	0	3	867	870	3	430	433	248
May 10 - May 18	0	0	569	569	0	372	372	250
⁶ May 18 - Jun 1	0	0	1268	1268	0	314	314	9
Jun 1 - Jun 7	0	0	77	77	0	116	116	19
Jun 7 - Jun 14	0	0	660	660	0	393	393	307
Jun 14 - Jun 22	0	0	1277	1277	1	639	640	32
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/21								
² Only 13 of the 36 traps serviced this week due to pesticide applications on site								
³ 13 of the 36 traps in field since Mar 11; 23 of the 36 traps in field since Feb 22								
⁴ Traps not serviced in Zone 2 during the week of Apr 1 due to severe weather on site								
⁵ Traps not serviced in Zone 2 during the week of Apr 22 due to pesticide applications on site								
⁶ Traps not serviced in Zone 2 during the week of May 27 due to pesticide applications on site								



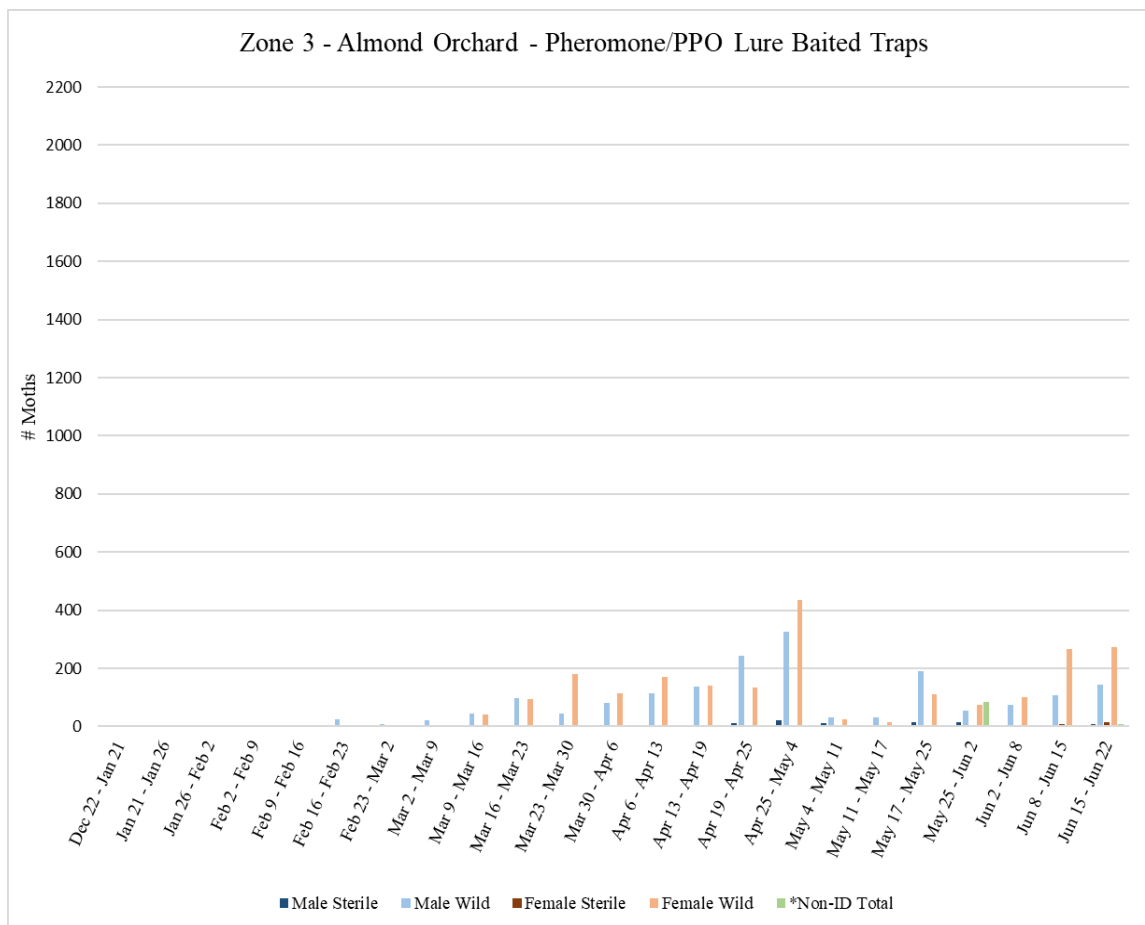
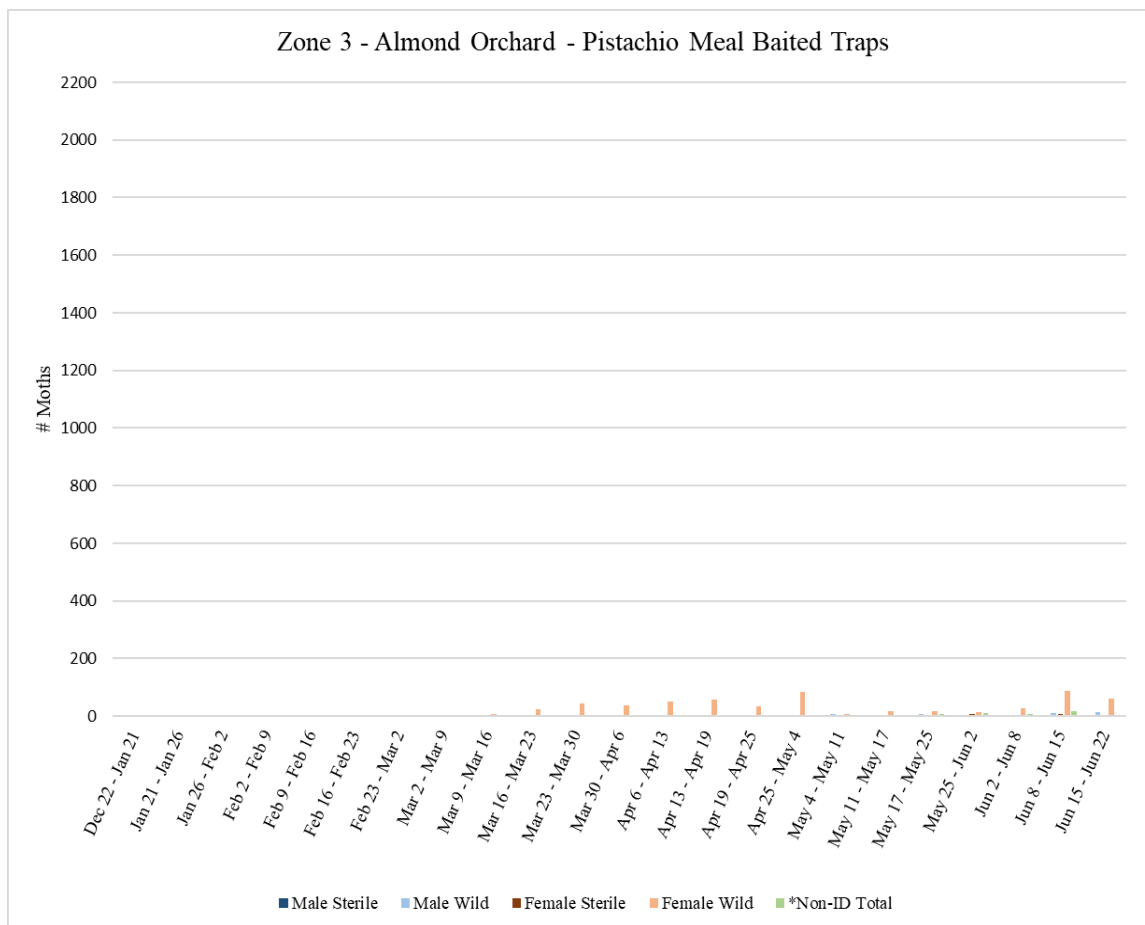
Zone 3

Zone 3 is an almond orchard where aerial NOW SIT releases are conducted. A total of **72** traps were collected from Zone 3 on Wednesday, June 15, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

A total of **72** traps were collected from Zone 3 on Wednesday, June 22, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

Zone 3 - Almond								
Pistachio Meal Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 22 - Jan 21	0	0	0	0	0	0	0	0
Jan 21 - Jan 26	0	0	0	0	0	0	0	0
Jan 26 - Feb 2	0	0	0	0	0	0	0	0
Feb 2 - Feb 9	0	0	0	0	0	0	0	0
Feb 9 - Feb 16	0	0	0	0	0	0	0	0
Feb 16 - Feb 23	0	0	0	0	0	0	0	0
Feb 23 - Mar 2	0	0	1	1	0	0	0	0
Mar 2 - Mar 9	0	0	0	0	0	3	3	0
Mar 9 - Mar 16	2	0	4	4	0	9	9	0
Mar 16 - Mar 23	8	0	0	0	0	24	24	0
Mar 23 - Mar 30	9	0	5	5	0	45	45	0
Mar 30 - Apr 6	7	0	0	0	0	39	39	0
Apr 6 - Apr 13	8	0	2	2	0	52	52	0
Apr 13 - Apr 19	7	0	0	0	0	59	59	0
Apr 19 - Apr 25	6	1	1	2	2	34	36	0
Apr 25 - May 4	9	0	1	1	4	84	88	0
May 4 - May 11	8	0	6	6	0	6	6	2
May 11 - May 17	6	0	0	0	1	17	18	1
May 17 - May 25	9	0	7	7	0	17	17	8
May 25 - Jun 2	5	5	3	8	6	14	20	12
Jun 2 - Jun 8	0	3	1	4	2	29	31	8
Jun 8 - Jun 15	2	4	11	15	6	87	93	16
Jun 15 - Jun 22	3	1	13	14	5	62	67	2
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/22								

Zone 3 - Almond								
Pheromone/PPO Lure Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 22 - Jan 21	0	0	0	0	0	0	0	1
Jan 21 - Jan 26	0	0	1	1	0	0	0	0
Jan 26 - Feb 2	0	0	0	0	0	0	0	0
Feb 2 - Feb 9	0	0	0	0	0	0	0	0
Feb 9 - Feb 16	0	0	6	6	0	0	0	0
Feb 16 - Feb 23	0	0	24	24	0	2	2	1
Feb 23 - Mar 2	0	0	7	7	0	0	0	0
Mar 2 - Mar 9	0	0	23	23	0	3	3	1
Mar 9 - Mar 16	2	0	46	46	0	40	40	0
Mar 16 - Mar 23	8	1	96	97	0	94	94	0
Mar 23 - Mar 30	9	1	45	46	0	182	182	0
Mar 30 - Apr 6	7	1	82	83	0	113	113	0
Apr 6 - Apr 13	8	1	113	114	0	171	171	0
Apr 13 - Apr 19	7	0	139	139	0	142	142	0
Apr 19 - Apr 25	6	10	243	253	1	134	135	0
Apr 25 - May 4	9	22	325	347	1	435	436	1
May 4 - May 11	8	11	30	41	0	25	25	3
May 11 - May 17	6	4	31	35	0	14	14	2
May 17 - May 25	9	14	192	206	1	112	113	4
May 25 - Jun 2	5	14	56	70	2	73	75	85
Jun 2 - Jun 8	0	6	76	82	1	100	101	1
Jun 8 - Jun 15	2	5	108	113	8	268	276	3
Jun 15 - Jun 22	3	8	144	152	14	274	288	8
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/22								



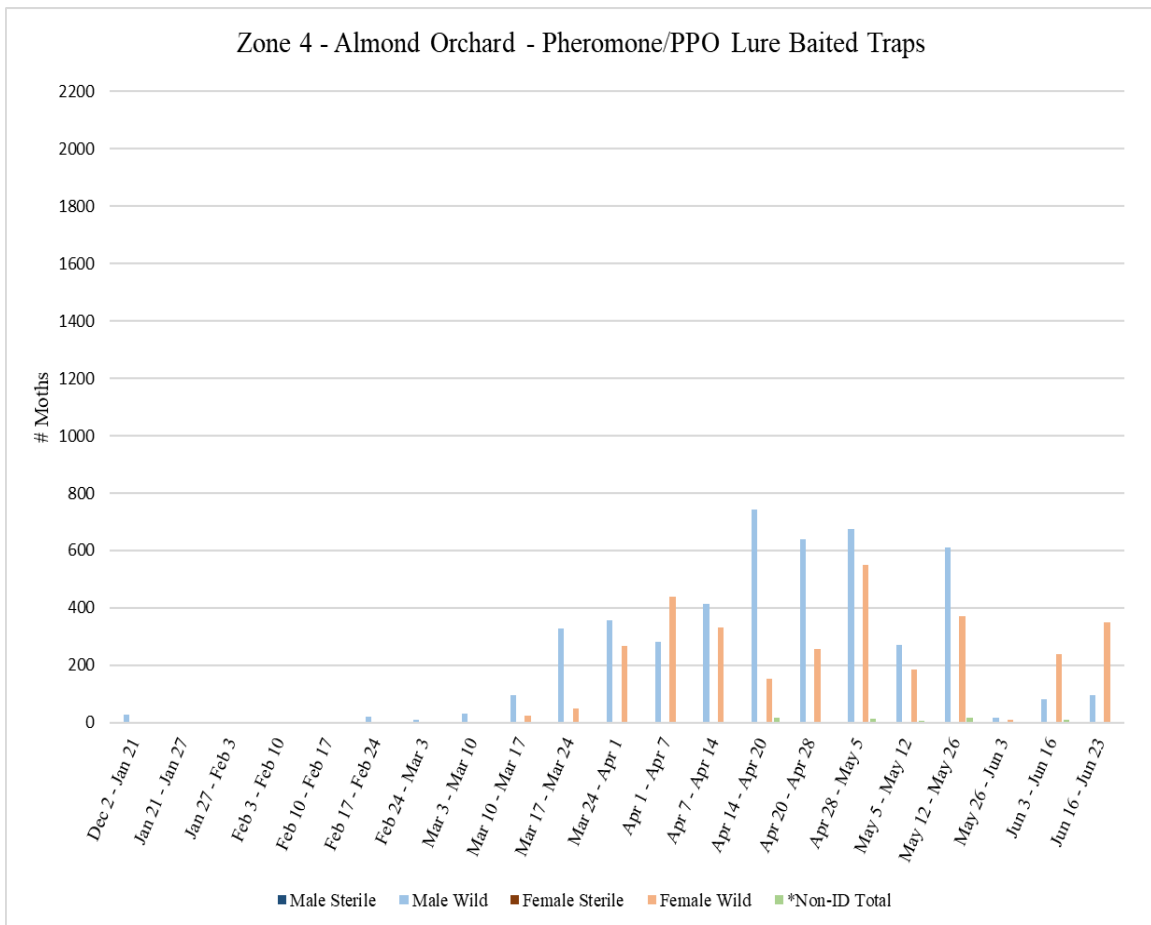
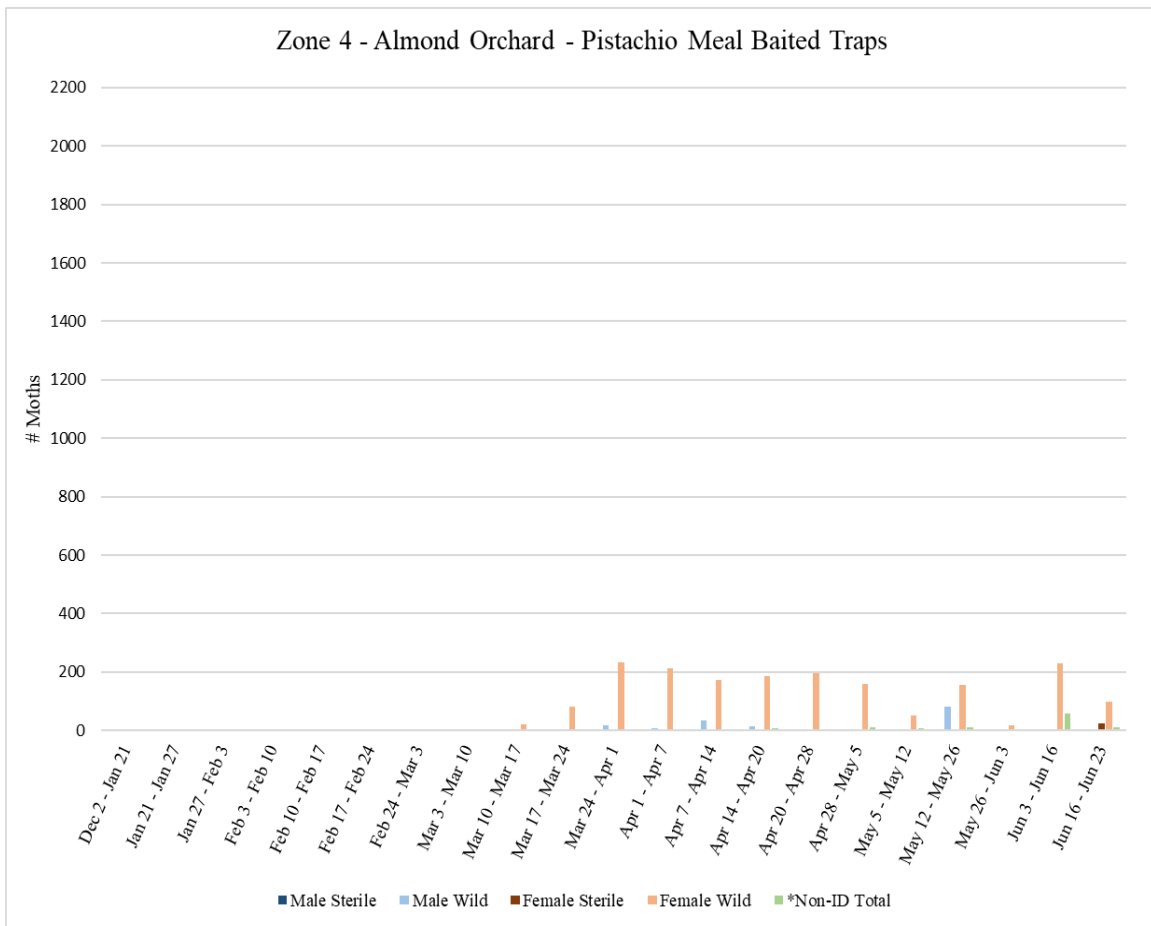
Zone 4

Zone 4 is an almond orchard where aerial NOW SIT releases are not conducted. A total of **72** traps were collected from Zone 4 on Thursday, June 16, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

A total of **72** traps were collected from Zone 4 on Thursday, June 23, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

Zone 4 - Almond								
Pistachio Meal Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 2 - Jan 21	0	0	0	0	0	0	0	0
Jan 21 - Jan 27	0	0	0	0	0	0	0	0
Jan 27 - Feb 3	0	0	0	0	0	0	0	0
Feb 3 - Feb 10	0	0	0	0	0	0	0	0
Feb 10 - Feb 17	0	0	0	0	0	0	0	0
Feb 17 - Feb 24	0	0	0	0	0	2	2	0
Feb 24 - Mar 3	0	0	0	0	0	1	1	0
Mar 3 - Mar 10	0	0	4	4	0	5	5	0
Mar 10 - Mar 17	0	0	5	5	0	21	21	0
Mar 17 - Mar 24	0	0	3	3	0	81	81	0
Mar 24 - Apr 1	0	0	17	17	0	232	232	0
Apr 1 - Apr 7	0	0	7	7	0	213	213	0
Apr 7 - Apr 14	0	0	35	35	0	172	172	0
Apr 14 - Apr 20	0	0	14	14	0	187	187	7
Apr 20 - Apr 28	0	0	0	0	0	197	197	0
Apr 28 - May 5	0	0	4	4	0	159	159	11
May 5 - May 12	0	0	3	3	0	52	52	6
² May 12 - May 26	0	0	83	83	0	157	157	11
May 26 - Jun 3	0	3	4	7	2	16	18	1
³ Jun 3 - Jun 16	0	1	1	2	1	229	230	57
Jun 16 - Jun 23	0	0	5	5	24	97	121	11
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/2								
² Traps not serviced in Zone 4 during the week of May 20 due to pesticide applications on site								
³ Traps not serviced in Zone 4 during the week of June 10 due to staff shortage								

Zone 4 - Almond								
Pheromone/PPO Lure Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 2 - Jan 21	0	0	26	26	0	1	1	0
Jan 21 - Jan 27	0	0	0	0	0	0	0	0
Jan 27 - Feb 3	0	0	0	0	0	0	0	0
Feb 3 - Feb 10	0	0	0	0	0	0	0	0
Feb 10 - Feb 17	0	0	4	4	0	0	0	0
Feb 17 - Feb 24	0	0	20	20	0	1	1	0
Feb 24 - Mar 3	0	0	11	11	0	3	3	0
Mar 3 - Mar 10	0	0	30	30	0	3	3	0
Mar 10 - Mar 17	0	0	96	96	0	25	25	1
Mar 17 - Mar 24	0	0	328	328	0	50	50	0
Mar 24 - Apr 1	0	0	355	355	0	267	267	0
Apr 1 - Apr 7	0	0	281	281	0	439	439	0
Apr 7 - Apr 14	0	0	414	414	0	330	330	0
Apr 14 - Apr 20	0	0	742	742	0	154	154	17
Apr 20 - Apr 28	0	0	640	640	0	257	257	3
Apr 28 - May 5	0	0	676	676	0	549	549	14
May 5 - May 12	0	0	271	271	0	185	185	6
² May 12 - May 26	0	0	609	609	0	370	370	18
May 26 - Jun 3	0	1	17	18	2	11	13	0
³ Jun 3 - Jun 16	0	0	82	82	0	240	240	8
Jun 16 - Jun 23	0	0	96	96	0	349	349	2
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/2								
² Traps not serviced in Zone 4 during the week of May 20 due to pesticide applications on site								
³ Traps not serviced in Zone 4 during the week of June 10 due to staff shortage								



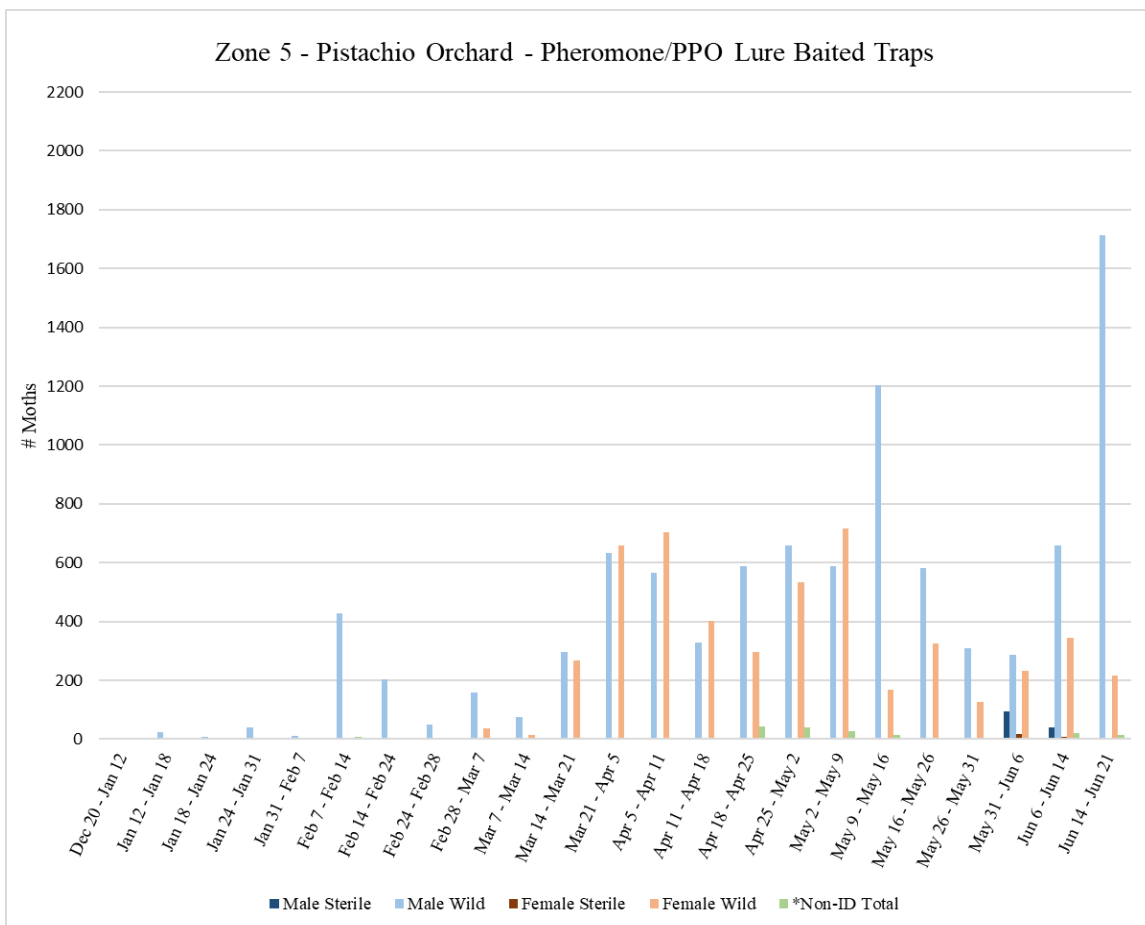
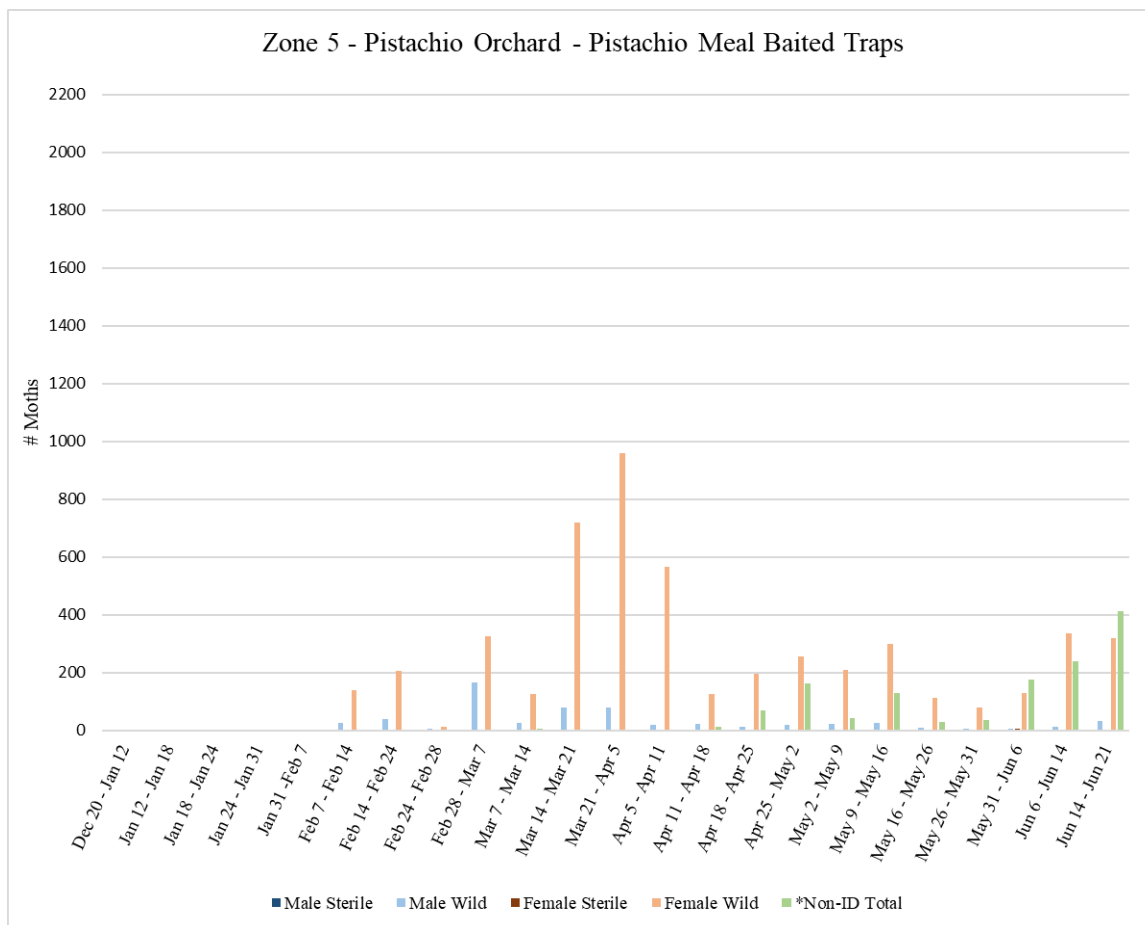
Zone 5

Zone 5 is a pistachio orchard where aerial NOW SIT releases will be conducted. A total of **72** traps were collected from Zone 5 on Tuesday, June 14, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

A total of **72** traps were collected from Zone 5 on Tuesday, June 21, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

Zone 5 - Pistachio								
Pistachio Meal Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 20 - Jan 12	0	0	0	0	0	0	0	0
Jan 12 - Jan 18	0	0	0	0	0	0	0	0
Jan 18 - Jan 24	0	0	0	0	0	0	0	0
Jan 24 - Jan 31	0	0	1	1	0	0	0	0
Jan 31 -Feb 7	0	0	0	0	0	0	0	0
Feb 7 - Feb 14	0	0	25	25	0	138	138	0
Feb 14 - Feb 24	0	0	40	40	0	204	204	0
Feb 24 - Feb 28	0	0	6	6	0	12	12	0
Feb 28 - Mar 7	0	0	166	166	0	327	327	3
Mar 7 - Mar 14	0	0	26	26	0	124	124	5
Mar 14 - Mar 21	0	0	80	80	0	720	720	2
² Mar 21 - Apr 5	0	0	78	78	0	960	960	0
Apr 5 - Apr 11	0	0	19	19	0	566	566	3
Apr 11 - Apr 18	0	0	21	21	0	127	127	11
Apr 18 - Apr 25	0	0	11	11	0	194	194	70
Apr 25 - May 2	0	0	18	18	0	254	254	161
May 2 - May 9	0	0	21	21	0	210	210	41
May 9 - May 16	0	0	27	27	0	298	298	130
May 16 - May 26	0	0	9	9	0	111	111	30
May 26 - May 31	2	0	4	4	1	80	81	35
May 31 - Jun 6	0	0	5	5	5	130	135	177
Jun 6 - Jun 14	0	0	11	11	0	337	337	238
Jun 14 - Jun 21	0	0	32	32	3	320	323	411
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/20								
² Traps not serviced in Zone 5 during the week of Apr 1 due to severe weather on site								

Zone 5 - Pistachio								
Pheromone/PPO Lure Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 20 - Jan 12	0	0	0	0	0	0	0	0
Jan 12 - Jan 18	0	0	24	24	0	0	0	0
Jan 18 - Jan 24	0	0	7	7	0	0	0	0
Jan 24 - Jan 31	0	0	41	41	0	0	0	0
Jan 31 - Feb 7	0	0	10	10	0	0	0	0
Feb 7 - Feb 14	0	0	427	427	0	1	1	7
Feb 14 - Feb 24	0	0	202	202	0	3	3	0
Feb 24 - Feb 28	0	0	51	51	0	0	0	0
Feb 28 - Mar 7	0	0	159	159	0	38	38	0
Mar 7 - Mar 14	0	0	74	74	0	15	15	0
Mar 14 - Mar 21	0	0	296	296	0	266	266	4
² Mar 21 - Apr 5	0	0	634	634	0	660	660	2
Apr 5 - Apr 11	0	0	565	565	0	703	703	0
Apr 11 - Apr 18	0	0	329	329	0	402	402	4
Apr 18 - Apr 25	0	0	589	589	0	297	297	42
Apr 25 - May 2	0	0	657	657	0	535	535	39
May 2 - May 9	0	0	589	589	0	715	715	26
May 9 - May 16	0	0	1203	1203	0	168	168	15
May 16 - May 26	0	0	582	582	0	325	325	4
May 26 - May 31	2	1	308	309	0	125	125	5
May 31 - Jun 6	0	95	288	383	17	231	248	4
Jun 6 - Jun 14	0	41	660	701	8	343	351	22
Jun 14 - Jun 21	0	0	1712	1712	0	215	215	13
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/20								
² Traps not serviced in Zone 5 during the week of Apr 1 due to severe weather on site								



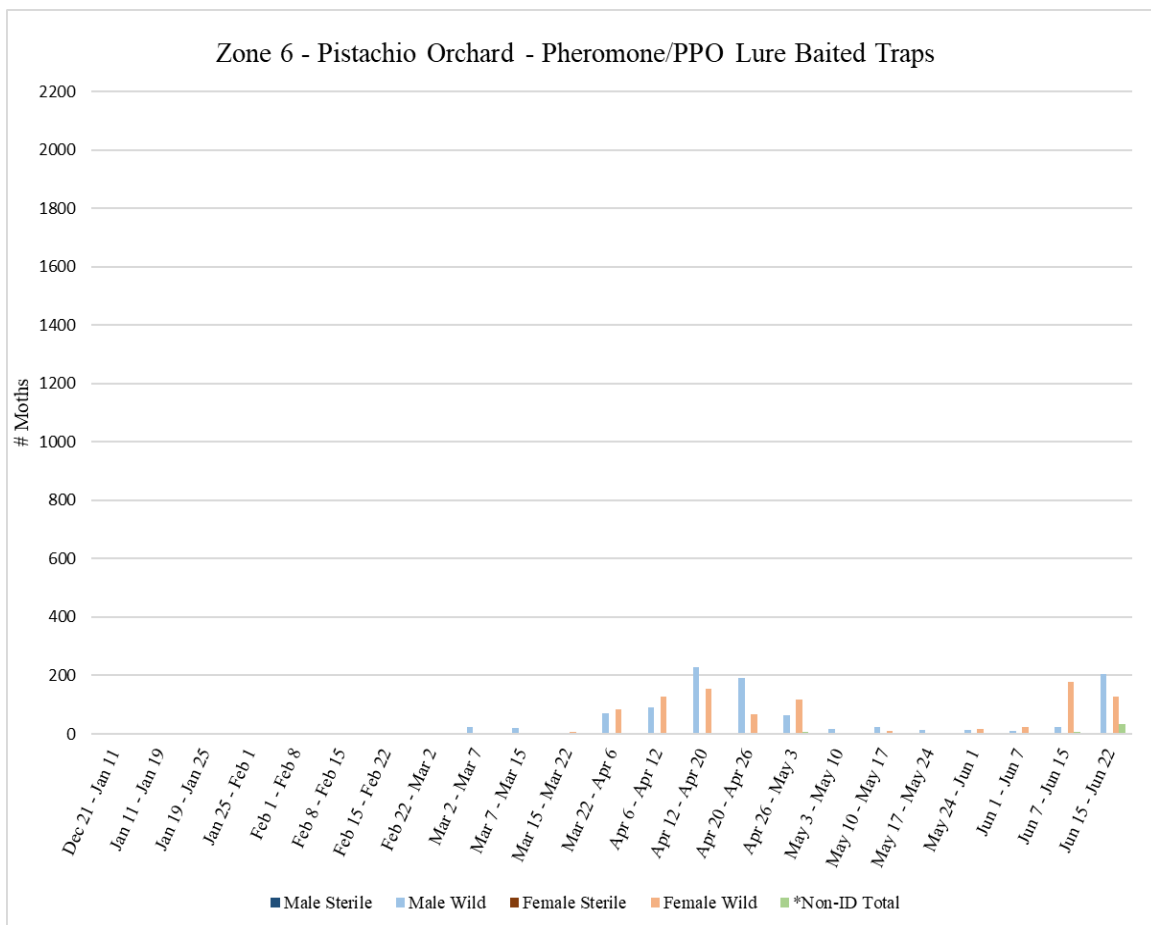
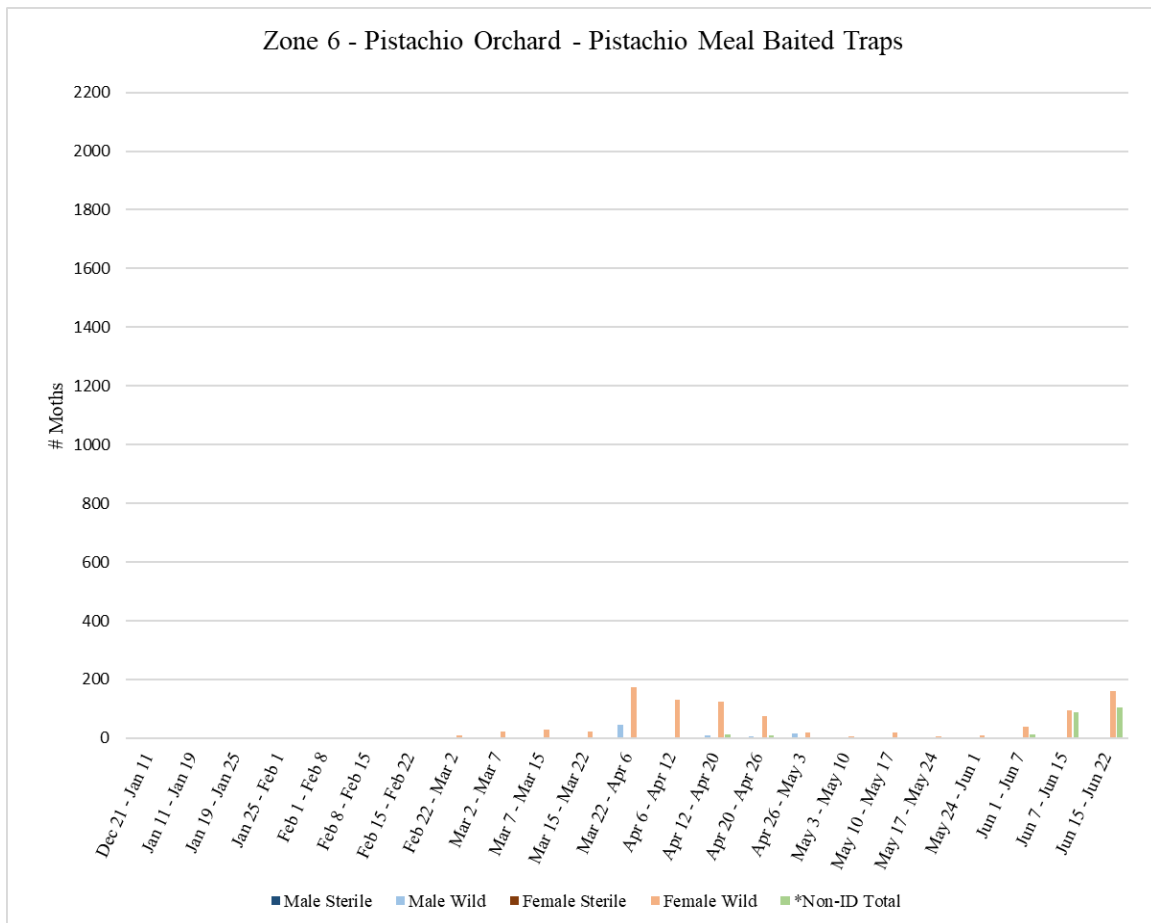
Zone 6

Zone 6 is a pistachio orchard where aerial NOW SIT releases are not conducted. A total of **18** traps were collected from Zone 6 on Wednesday, June 15, with **9** pistachio meal baited traps and **9** pheromone/PPO lure traps.

A total of **18** traps were collected from Zone 6 on Wednesday, June 22, with **9** pistachio meal baited traps and **9** pheromone/PPO lure traps.

Zone 6 - Pistachio								
Pistachio Meal Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 21 - Jan 11	0	0	0	0	0	0	0	0
Jan 11 - Jan 19	0	0	0	0	0	0	0	0
Jan 19 - Jan 25	0	0	0	0	0	0	0	0
Jan 25 - Feb 1	0	0	0	0	0	0	0	0
Feb 1 - Feb 8	0	0	0	0	0	0	0	0
Feb 8 - Feb 15	0	0	1	1	0	0	0	0
Feb 15 - Feb 22	0	0	0	0	0	4	4	0
Feb 22 - Mar 2	0	0	1	1	0	11	11	0
Mar 2 - Mar 7	0	0	1	1	0	22	22	0
Mar 7 - Mar 15	0	0	0	0	0	29	29	0
Mar 15 - Mar 22	0	0	0	0	0	24	24	0
² Mar 22 - Apr 6	0	0	44	44	0	175	175	0
Apr 6 - Apr 12	0	0	1	1	0	132	132	0
Apr 12 - Apr 20	0	0	11	11	0	123	123	14
Apr 20 - Apr 26	0	0	5	5	0	75	75	9
Apr 26 - May 3	0	0	16	16	0	18	18	3
May 3 - May 10	0	0	0	0	0	7	7	1
May 10 - May 17	0	0	2	2	0	19	19	4
May 17 - May 24	0	0	0	0	0	7	7	1
May 24 - Jun 1	0	0	0	0	0	9	9	1
Jun 1 - Jun 7	0	0	0	0	0	38	38	14
Jun 7 - Jun 15	0	0	1	1	0	96	96	87
Jun 15 - Jun 22	0	0	1	1	0	161	161	105
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/21								
² Traps not serviced in Zone 6 during the week of Apr 1 due to severe weather on site								

Zone 6 - Pistachio								
Pheromone/PPO Lure Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 21 - Jan 11	0	0	0	0	0	0	0	0
Jan 11 - Jan 19	0	0	1	1	0	0	0	0
Jan 19 - Jan 25	0	0	0	0	0	0	0	0
Jan 25 - Feb 1	0	0	0	0	0	0	0	0
Feb 1 - Feb 8	0	0	0	0	0	0	0	0
Feb 8 - Feb 15	0	0	3	3	0	0	0	0
Feb 15 - Feb 22	0	0	3	3	0	0	0	0
Feb 22 - Mar 2	0	0	2	2	0	1	1	0
Mar 2 - Mar 7	0	0	24	24	0	1	1	0
Mar 7 - Mar 15	0	0	20	20	0	0	0	0
Mar 15 - Mar 22	0	0	0	0	0	8	8	0
² Mar 22 - Apr 6	0	0	72	72	0	83	83	0
Apr 6 - Apr 12	0	0	89	89	0	126	126	0
Apr 12 - Apr 20	0	0	228	228	0	155	155	3
Apr 20 - Apr 26	0	0	192	192	0	67	67	2
Apr 26 - May 3	0	0	64	64	0	118	118	5
May 3 - May 10	0	0	16	16	0	2	2	2
May 10 - May 17	0	0	23	23	0	11	11	2
May 17 - May 24	0	0	13	13	0	3	3	0
May 24 - Jun 1	0	0	12	12	0	17	17	1
Jun 1 - Jun 7	0	0	10	10	0	22	22	0
Jun 7 - Jun 15	0	0	22	22	0	177	177	7
Jun 15 - Jun 22	0	0	206	206	0	126	126	35
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/21								
² Traps not serviced in Zone 6 during the week of Apr 1 due to severe weather on site								



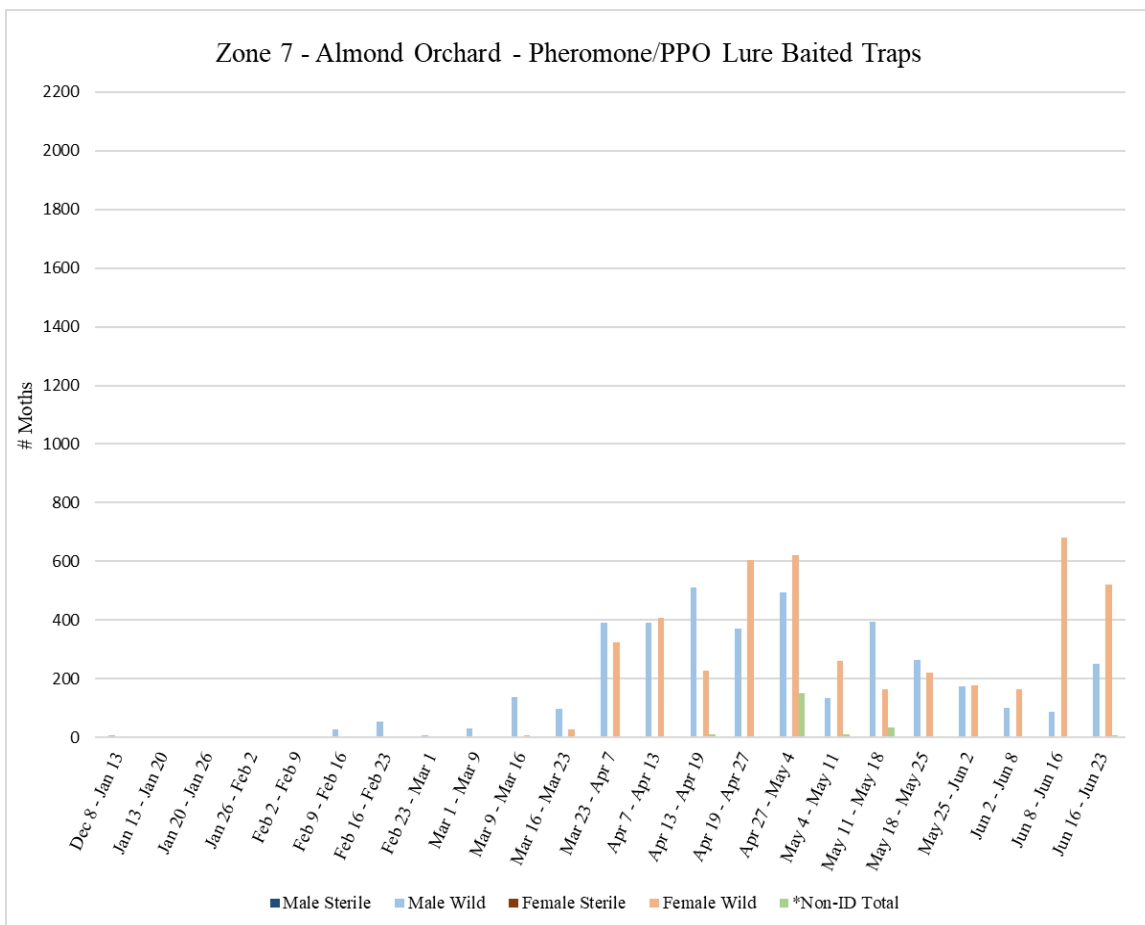
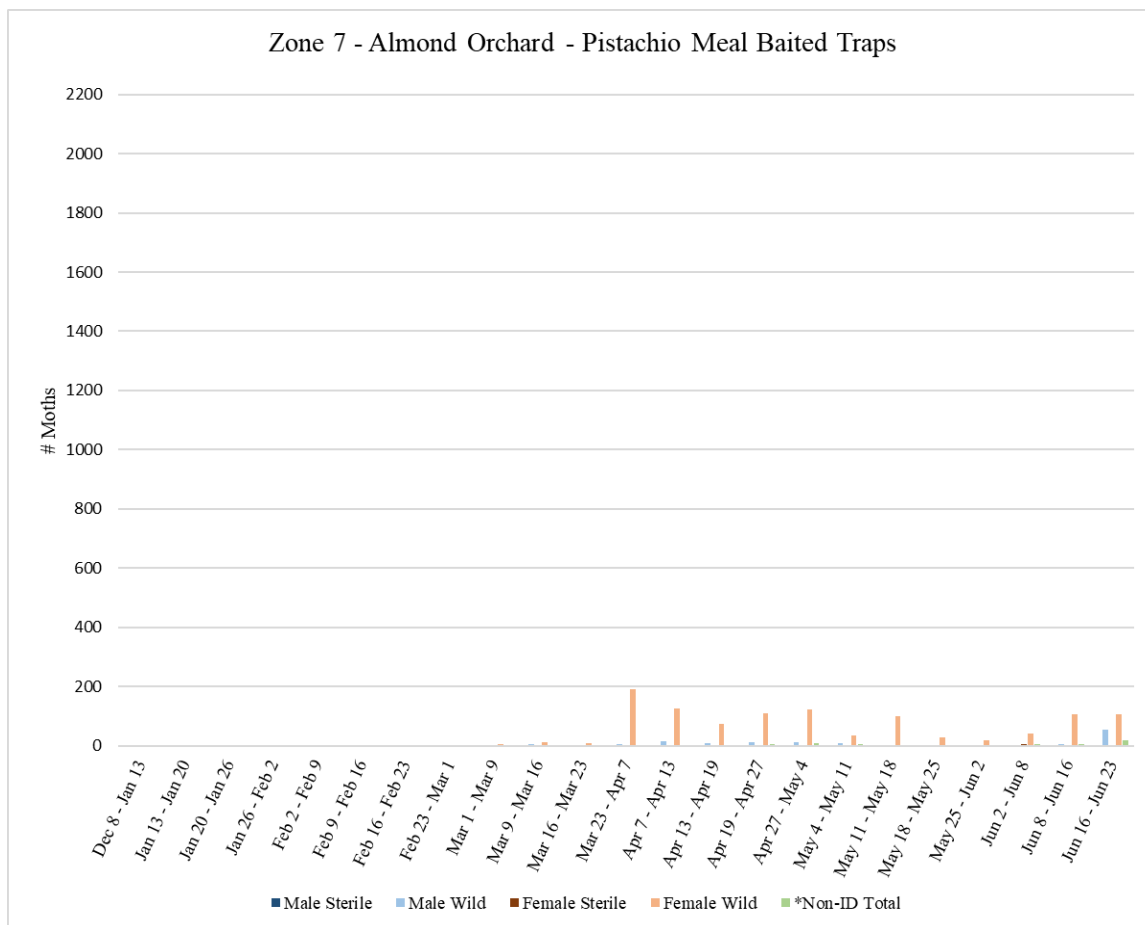
Zone 7

Zone 7 is an almond orchard where aerial NOW SIT releases will be conducted. A total of **72** traps were collected from Zone 7 on Thursday, June 16, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

A total of **72** traps were collected from Zone 7 on Thursday, June 23, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

Zone 7 - Almond								
Pistachio Meal Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 8 - Jan 13	0	0	0	0	0	0	0	0
Jan 13 - Jan 20	0	0	0	0	0	0	0	0
Jan 20 - Jan 26	0	0	0	0	0	0	0	0
Jan 26 - Feb 2	0	0	0	0	0	0	0	0
Feb 2 - Feb 9	0	0	0	0	0	0	0	0
Feb 9 - Feb 16	0	0	0	0	0	0	0	0
Feb 16 - Feb 23	0	0	3	3	0	1	1	0
Feb 23 - Mar 1	0	0	0	0	0	0	0	0
Mar 1 - Mar 9	0	0	1	1	0	7	7	0
Mar 9 - Mar 16	0	0	6	6	0	13	13	0
Mar 16 - Mar 23	0	0	0	0	0	10	10	0
² Mar 23 - Apr 7	0	0	6	6	0	191	191	0
Apr 7 - Apr 13	0	0	17	17	0	125	125	0
Apr 13 - Apr 19	0	0	10	10	0	74	74	3
Apr 19 - Apr 27	0	0	11	11	0	109	109	7
Apr 27 - May 4	0	0	11	11	0	122	122	10
May 4 - May 11	0	0	8	8	0	34	34	6
May 11 - May 18	0	0	0	0	0	101	101	0
May 18 - May 25	0	0	0	0	0	30	30	1
May 25 - Jun 2	2	0	1	1	0	19	19	0
Jun 2 - Jun 8	0	2	2	4	4	40	44	4
Jun 8 - Jun 16	0	0	5	5	0	105	105	6
Jun 16 - Jun 23	0	0	56	56	0	108	108	18
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/8								
² Traps not serviced in Zone 7 during the week of Apr 1 due to severe weather on site								

Zone 7 - Almond								
Pheromone/PPO Lure Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 8 - Jan 13	0	0	6	6	0	0	0	0
Jan 13 - Jan 20	0	0	0	0	0	0	0	0
Jan 20 - Jan 26	0	0	0	0	0	0	0	0
Jan 26 - Feb 2	0	0	0	0	0	0	0	0
Feb 2 - Feb 9	0	0	0	0	0	0	0	0
Feb 9 - Feb 16	0	0	29	29	0	0	0	0
Feb 16 - Feb 23	0	0	55	55	0	0	0	0
Feb 23 - Mar 1	0	0	8	8	0	0	0	0
Mar 1 - Mar 9	0	0	31	31	0	0	0	0
Mar 9 - Mar 16	0	0	138	138	0	8	8	0
Mar 16 - Mar 23	0	0	98	98	0	27	27	0
² Mar 23 - Apr 7	0	0	390	390	0	325	325	1
Apr 7 - Apr 13	0	0	390	390	0	408	408	1
Apr 13 - Apr 19	0	0	512	512	0	227	227	11
Apr 19 - Apr 27	0	0	372	372	0	604	604	0
Apr 27 - May 4	0	0	495	495	0	623	623	150
May 4 - May 11	0	0	135	135	0	261	261	12
May 11 - May 18	0	0	396	396	0	165	165	34
May 18 - May 25	0	0	263	263	0	221	221	3
May 25 - Jun 2	2	0	176	176	0	177	177	0
Jun 2 - Jun 8	0	5	100	105	1	165	166	1
Jun 8 - Jun 16	0	0	88	88	0	683	683	1
Jun 16 - Jun 23	0	2	251	253	0	522	522	8
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/8								
² Traps not serviced in Zone 7 during the week of Apr 1 due to severe weather on site								



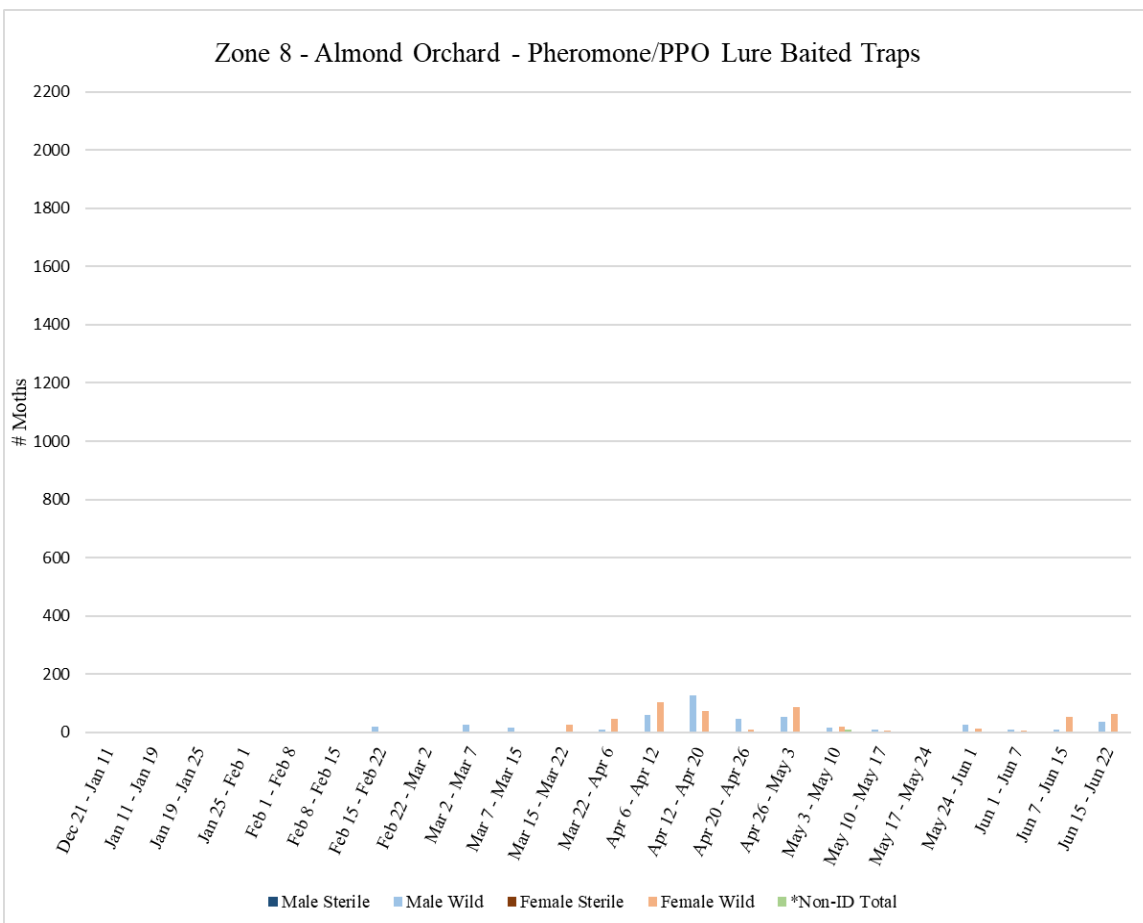
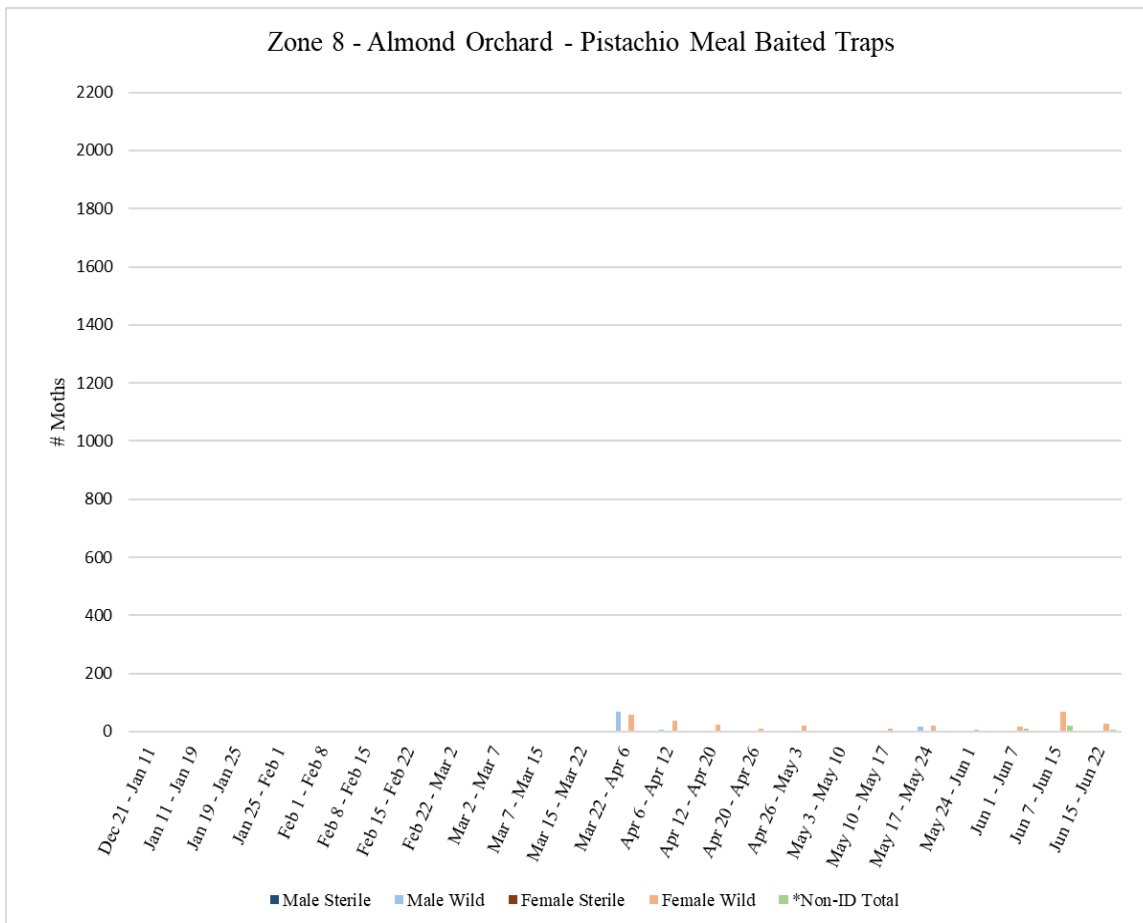
Zone 8

Zone 8 is an almond orchard where aerial NOW SIT releases are not conducted. A total of **18** traps were collected from Zone 8 on Wednesday, June 15, with **9** pistachio meal baited traps and **9** pheromone/PPO lure traps.

A total of **18** traps were collected from Zone 8 on Wednesday, June 22, with **9** pistachio meal baited traps and **9** pheromone/PPO lure traps.

Zone 8 - Almond								
Pistachio Meal Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 21 - Jan 11	0	0	0	0	0	0	0	0
Jan 11 - Jan 19	0	0	0	0	0	0	0	0
Jan 19 - Jan 25	0	0	0	0	0	0	0	0
Jan 25 - Feb 1	0	0	0	0	0	0	0	0
Feb 1 - Feb 8	0	0	0	0	0	0	0	0
Feb 8 - Feb 15	0	0	0	0	0	0	0	0
Feb 15 - Feb 22	0	0	1	1	0	0	0	0
Feb 22 - Mar 2	0	0	0	0	0	0	0	0
Mar 2 - Mar 7	0	0	1	1	0	0	0	0
Mar 7 - Mar 15	0	0	0	0	0	1	1	0
Mar 15 - Mar 22	0	0	0	0	0	1	1	0
² Mar 22 - Apr 6	0	0	70	70	0	59	59	0
Apr 6 - Apr 12	0	0	7	7	0	37	37	0
Apr 12 - Apr 20	0	0	2	2	0	23	23	0
Apr 20 - Apr 26	0	0	0	0	0	9	9	0
Apr 26 - May 3	0	0	0	0	0	22	22	2
May 3 - May 10	0	0	3	3	0	3	3	2
May 10 - May 17	0	0	0	0	0	10	10	2
May 17 - May 24	0	0	16	16	0	19	19	0
May 24 - Jun 1	0	0	1	1	0	6	6	0
Jun 1 - Jun 7	0	0	0	0	0	16	16	9
Jun 7 - Jun 15	0	0	1	1	1	70	71	19
Jun 15 - Jun 22	0	0	1	1	0	28	28	5
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/21								
² Traps not serviced in Zone 8 during the week of Apr 1 due to severe weather on site								

Zone 8 - Almond								
Pheromone/PPO Lure Baited Traps								
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total	*Non-ID Total
¹ Dec 21 - Jan 11	0	0	0	0	0	0	0	0
Jan 11 - Jan 19	0	0	0	0	0	0	0	0
Jan 19 - Jan 25	0	0	0	0	0	0	0	0
Jan 25 - Feb 1	0	0	0	0	0	0	0	0
Feb 1 - Feb 8	0	0	0	0	0	0	0	0
Feb 8 - Feb 15	0	0	2	2	0	1	1	0
Feb 15 - Feb 22	0	0	19	19	0	0	0	0
Feb 22 - Mar 2	0	0	2	2	0	0	0	0
Mar 2 - Mar 7	0	0	28	28	0	4	4	0
Mar 7 - Mar 15	0	0	15	15	0	0	0	0
Mar 15 - Mar 22	0	0	0	0	0	25	25	0
² Mar 22 - Apr 6	0	0	8	8	0	46	46	0
Apr 6 - Apr 12	0	0	61	61	0	104	104	2
Apr 12 - Apr 20	0	0	126	126	0	75	75	0
Apr 20 - Apr 26	0	0	48	48	0	11	11	4
Apr 26 - May 3	0	0	54	54	0	86	86	3
May 3 - May 10	0	0	16	16	0	20	20	8
May 10 - May 17	0	0	9	9	0	7	7	1
May 17 - May 24	0	0	0	0	0	4	4	1
May 24 - Jun 1	0	1	26	27	0	12	12	1
Jun 1 - Jun 7	0	0	9	9	0	7	7	0
Jun 7 - Jun 15	0	0	11	11	0	52	52	0
Jun 15 - Jun 22	0	3	37	40	0	64	64	1
*Non-ID counts are NOW moths unable to be sexed as male or female/or identified as sterile or wild due to missing or unrecognizable genitalia caused by predation while traps were in storage awaiting processing								
¹ Traps in field since 12/21								
² Traps not serviced in Zone 8 during the week of Apr 1 due to severe weather on site								



IV. Quality Control

QC tests are performed on samples taken from each shipment of sterile NOW moths. These tests include: zero-hour mortality rates, zero-hour mating dissections, forty-eight-hour mating dissections, seven-day longevity monitoring, and crush tests. Throughout the span of a week, Monday through Sunday, the results of each test are averaged. Below are the QC results for Mag 1 of sterile NOW moths during the week of Monday, June 6, 2022 to Sunday, June 12, 2022 (please note that there were no releases of Mag 2 this week, therefore there was no QC conducted on Mag 2):

Mag 1:

- 0% of moths from samples found dead at zero hour
- 0% of moths from samples found to have mated at zero hour
- 36% of moths from samples found to have mated after forty-eight hours
- 43% of moths from samples remained alive after seven days in BioChamber
- 100% of moths from samples found to have distinct red dye markings

Below are the QC results for Mag 1 of sterile NOW moths during the week of Monday, June 13, 2022 to Sunday, June 19, 2022 (please note that there were no releases of Mag 2 this week, therefore there was no QC conducted on Mag 2):

Mag 1:

- 1% of moths from samples found dead at zero hour
- 2% of moths from samples found to have mated at zero hour
- 8% of moths from samples found to have mated after forty-eight hours
- 51% of moths from samples remained alive after seven days in BioChamber
- 91% of moths from samples found to have distinct red dye markings