# Navel Orangeworm Pilot Project 2022 – Weekly Report

Week Ending – March 4, 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 are scheduled to begin on March 15, 2022, with one magazine of approximately 750,000 moths being released over Zones 1 and 3. The start date for a second magazine of approximately 750,000 moths has not been decided yet.

#### **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

### 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.

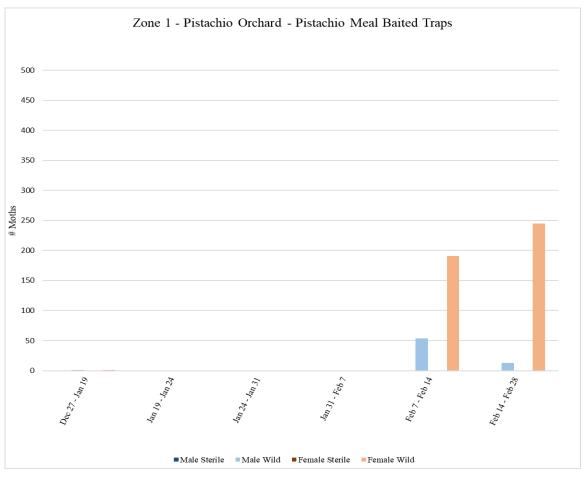
# III. Trap Results for Week Ending on March 4, 2022

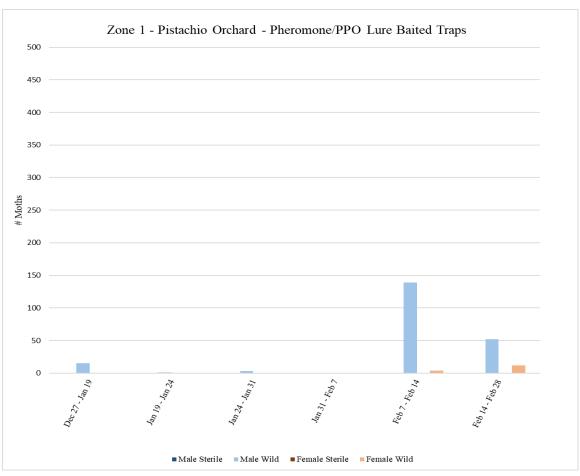
Zone 1

Zone 1 is a pistachio orchard where aerial NOW SIT releases will be conducted. A total of **72** traps were collected from Zone 1 on Monday, February 28, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

	Zone 1 - Pistachio											
	Pistachio Meal Baited Traps											
	# of											
	Releases											
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female					
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total					
<sup>1</sup> Dec 27 - Jan 19	0	0	1	1	0	1	1					
Jan 19 - Jan 24	0	0	0	0	0	0	0					
Jan 24 - Jan 31	0	0	0	0	0	0	0					
Jan 31 - Feb 7	0	0	0	0	0	0	0					
Feb 7 - Feb 14	0	0	54	54	0	191	191					
<sup>2</sup> Feb 14 - Feb 28	0	0	13	13	0	245	245					
<sup>1</sup> 18	3 of the 36 traps	in field since	Dec 20; 18	of the 36 tr	aps in field sind	ce Dec 27						
		<sup>2</sup> Traps	in field for	two weeks	1							

	Zone 1 - Pistachio											
	Pheromone/PPO Lure Baited Traps											
	# of											
	Releases											
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female					
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total					
<sup>1</sup> Dec 27 - Jan 19	0	0	15	15	0	0	0					
Jan 19 - Jan 24	0	0	1	1	0	0	0					
Jan 24 - Jan 31	0	0	3	3	0	0	0					
Jan 31 - Feb 7	0	0	0	0	0	0	0					
Feb 7 - Feb 14	0	0	139	139	0	4	4					
<sup>2</sup> Feb 14 - Feb 28	0	0	52	52	0	12	12					
<sup>1</sup> 18	3 of the 36 traps					ce Dec 27						
		<sup>2</sup> Traps	in field for	two weeks	3							

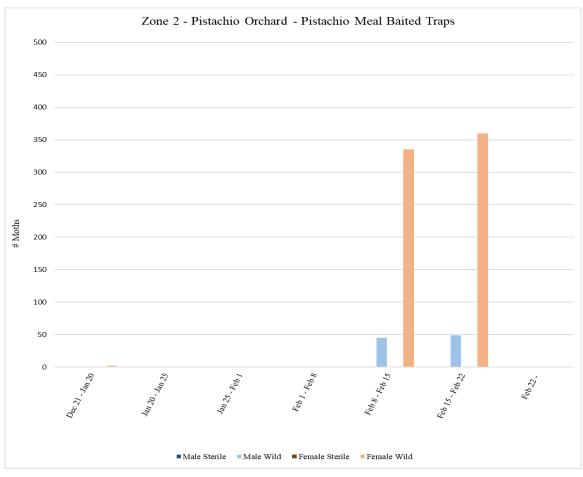


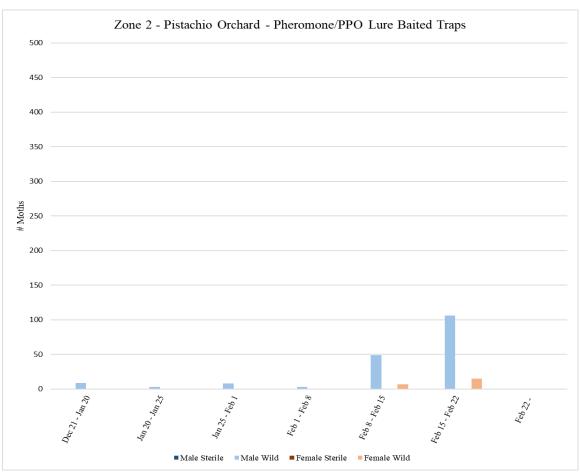


**Zone 2**Zone 2 is a pistachio orchard where aerial NOW SIT releases will not be conducted. No traps were collected from Zone 2 during the week of <u>March 4</u> due to pesticide applications on site.

	Zone 2 - Pistachio										
		Pistacl	nio Meal Ba	aited Traps							
	# of Releases										
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female				
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total				
<sup>1</sup> Dec 21 - Jan 20	0	0	0	0	0	2	2				
Jan 20 - Jan 25	0	0	0	0	0	0	0				
Jan 25 - Feb 1	0	0	0	0	0	0	0				
Feb 1 - Feb 8	0	0	0	0	0	0	0				
Feb 8 - Feb 15	0	0	45	45	0	335	335				
Feb 15 - Feb 22	0	0	49	49	0	360	360				
<sup>2</sup> Feb 22 -											
		<sup>1</sup> Trap	s in field si	nce 12/21							
<sup>2</sup> Zone	2 not serviced d	uring the w	eek of Mar	4 due to po	esticide applic	ations on site					

	Zone 2 - Pistachio										
		Pheromon	e/PPO Lure	e Baited Tra	aps						
Dates Traps in Field	# of Releases During Trap Period	Male Sterile	Male Wild	Male Total	Female Sterile	Female Wild	Female Total				
<sup>1</sup> Dec 21 - Jan 20	0	0	9	9	0	0	0				
Jan 20 - Jan 25	0	0	3	3	0	0	0				
Jan 25 - Feb 1	0	0	8	8	0	0	0				
Feb 1 - Feb 8	0	0	3	3	0	0	0				
Feb 8 - Feb 15	0	0	49	49	0	7	7				
Feb 15 - Feb 22	0	0	106	106	0	15	15				
<sup>2</sup> Feb 22 -											
<sup>2</sup> Zone	2 not serviced d		s in field si eek of Mar		esticide applic	ations on site	<u> </u>				

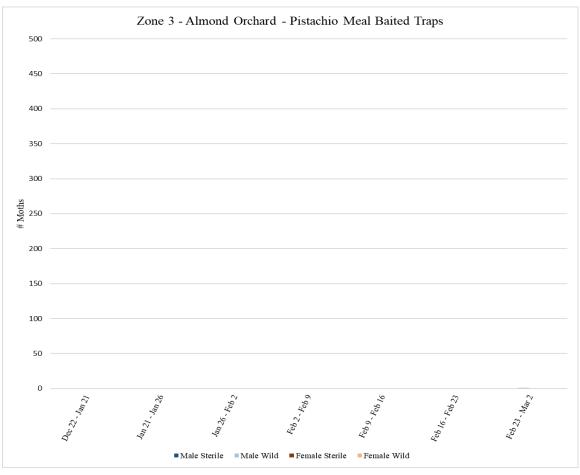


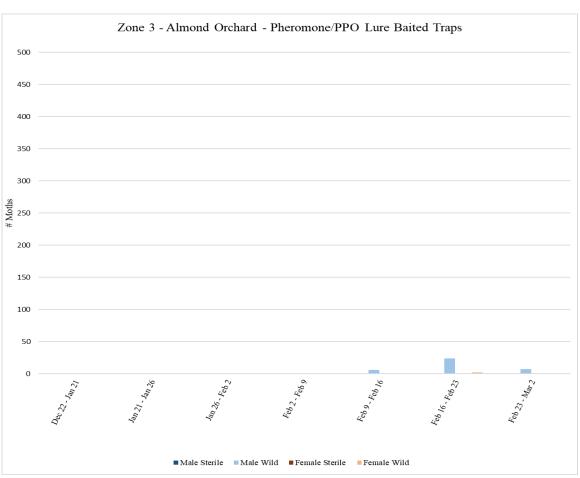


**Zone 3**Zone 3 is an almond orchard where aerial NOW SIT releases will be conducted. A total of **72** traps were collected from Zone 3 on <u>Wednesday</u>, <u>March 2</u>, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

	Zone 3 - Almond										
		Pistacl	nio Meal Ba	nited Traps							
	# of Releases										
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female				
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total				
<sup>1</sup> Dec 22 - Jan 21	0	0	0	0	0	0	0				
Jan 21 - Jan 26	0	0	0	0	0	0	0				
Jan 26 - Feb 2	0	0	0	0	0	0	0				
Feb 2 - Feb 9	0	0	0	0	0	0	0				
Feb 9 - Feb 16	0	0	0	0	0	0	0				
Feb 16 - Feb 23	0	0	0	0	0	0	0				
Feb 23 - Mar 2	0	0	1	1	0	0	0				
		<sup>1</sup> Trap	s in field si	nce 12/22							

	Zone 3 - Almond										
		Pheromon	e/PPO Lure	e Baited Tra	ıps						
	# of Releases										
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female				
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total				
<sup>1</sup> Dec 22 - Jan 21	0	0	0	0	0	0	0				
Jan 21 - Jan 26	0	0	1	1	0	0	0				
Jan 26 - Feb 2	0	0	0	0	0	0	0				
Feb 2 - Feb 9	0	0	0	0	0	0	0				
Feb 9 - Feb 16	0	0	6	6	0	0	0				
Feb 16 - Feb 23	0	0	24	24	0	2	2				
Feb 23 - Mar 2	0	0	7	7	0	0	0				
		1Trop	s in field si	noo 12/22							
red 23 - War 2	U		s in field si	nce 12/22	U	U	U				

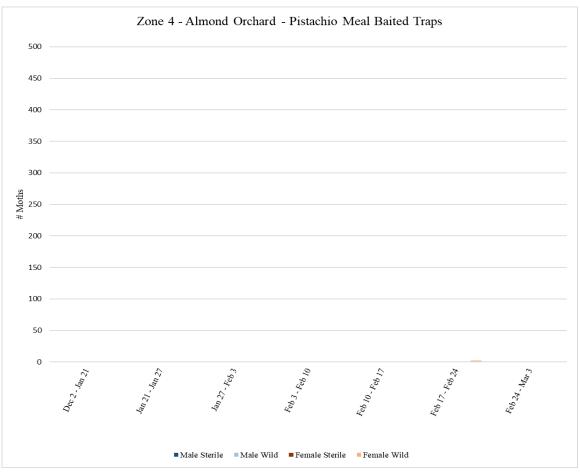


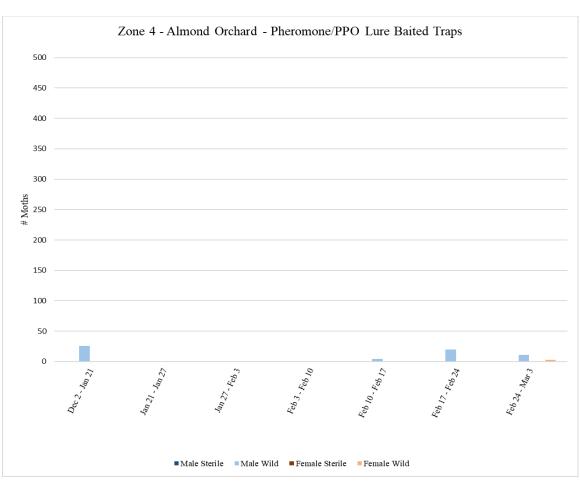


**Zone 4**Zone 4 is an almond orchard where aerial NOW SIT releases will not be conducted. A total of **72** traps were collected from Zone 4 on <u>Thursday</u>, <u>March 3</u>, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

	Zone 4 - Almond										
	Pistachio Meal Baited Traps										
	# of Releases										
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female				
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total				
<sup>1</sup> Dec 2 - Jan 21	0	0	0	0	0	0	0				
Jan 21 - Jan 27	0	0	0	0	0	0	0				
Jan 27 - Feb 3	0	0	0	0	0	0	0				
Feb 3 - Feb 10	0	0	0	0	0	0	0				
Feb 10 - Feb 17	0	0	0	0	0	0	0				
Feb 17 - Feb 24	0	0	0	0	0	2	2				
Feb 24 - Mar 3	0	0	0	0	0	1	1				
		<sup>1</sup> Trap	os in field s	ince 12/2							

	Zone 4 - Almond											
	Pheromone/PPO Lure Baited Traps											
	# of Releases											
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female					
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total					
<sup>1</sup> Dec 2 - Jan 21	0	0	26	26	0	1	1					
Jan 21 - Jan 27	0	0	0	0	0	0	0					
Jan 27 - Feb 3	0	0	0	0	0	0	0					
Feb 3 - Feb 10	0	0	0	0	0	0	0					
Feb 10 - Feb 17	0	0	4	4	0	0	0					
Feb 17 - Feb 24	0	0	20	20	0	1	1					
Feb 24 - Mar 3	0	0	11	11	0	3	3					
		<sup>1</sup> Trap	os in field s	ince 12/2								

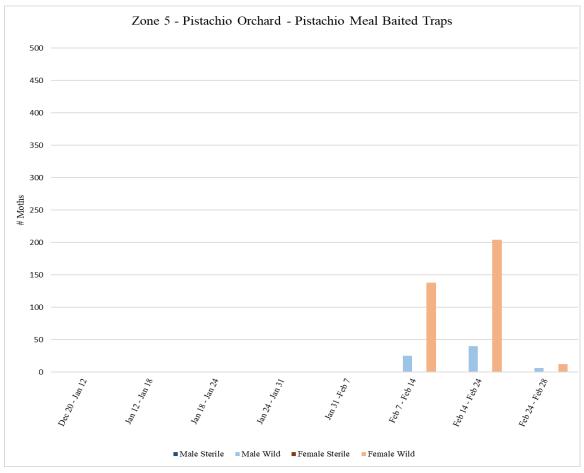


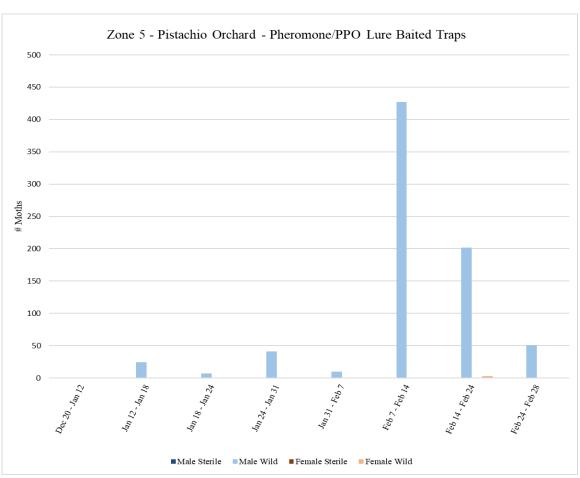


**Zone 5**Zone 5 is a pistachio orchard where aerial NOW SIT releases will be conducted. A total of **72** traps were collected from Zone 5 on Monday, February 28, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

	Zone 5 - Pistachio											
		Pistac	hio Meal B	aited Traps								
	# of											
	Releases											
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female					
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total					
<sup>1</sup> Dec 20 - Jan 12	0	0	0	0	0	0	0					
Jan 12 - Jan 18	0	0	0	0	0	0	0					
Jan 18 - Jan 24	0	0	0	0	0	0	0					
Jan 24 - Jan 31	0	0	1	1	0	0	0					
Jan 31 -Feb 7	0	0	0	0	0	0	0					
Feb 7 - Feb 14	0	0	25	25	0	138	138					
Feb 14 - Feb 24	0	0	40	40	0	204	204					
Feb 24 - Feb 28	0	0	6	6	0	12	12					
		<sup>1</sup> Trap	s in field si	nce 12/20								

	Zone 5 - Pistachio										
		Pheromor	ne/PPO Lur	e Baited Tra	aps						
	# of										
	Releases										
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female				
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total				
<sup>1</sup> Dec 20 - Jan 12	0	0	0	0	0	0	0				
Jan 12 - Jan 18	0	0	24	24	0	0	0				
Jan 18 - Jan 24	0	0	7	7	0	0	0				
Jan 24 - Jan 31	0	0	41	41	0	0	0				
Jan 31 - Feb 7	0	0	10	10	0	0	0				
Feb 7 - Feb 14	0	0	427	427	0	1	1				
Feb 14 - Feb 24	0	0	202	202	0	3	3				
Feb 24 - Feb 28	0	0	51	51	0	0	0				
		<sup>1</sup> Trap	s in field si	nce 12/20							

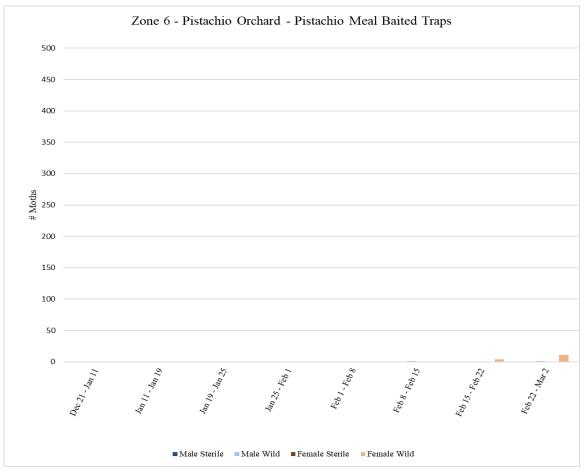


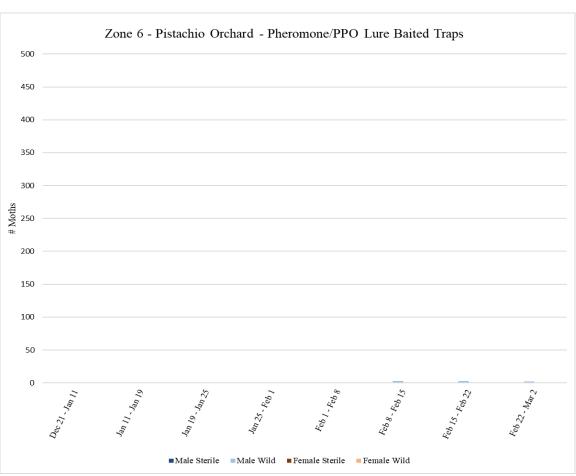


**Zone 6**Zone 6 is a pistachio orchard where aerial NOW SIT releases will not be conducted. A total of **18** traps were collected from Zone 6 on Wednesday, March 2, with **9** pistachio meal baited traps and **9** pheromone/PPO lure traps.

Zone 6 - Pistachio									
Pistachio Meal Baited Traps									
	# of								
	Releases								
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female		
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total		
<sup>1</sup> Dec 21 - Jan 11	0	0	0	0	0	0	0		
Jan 11 - Jan 19	0	0	0	0	0	0	0		
Jan 19 - Jan 25	0	0	0	0	0	0	0		
Jan 25 - Feb 1	0	0	0	0	0	0	0		
Feb 1 - Feb 8	0	0	0	0	0	0	0		
Feb 8 - Feb 15	0	0	1	1	0	0	0		
Feb 15 - Feb 22	0	0	0	0	0	4	4		
Feb 22 - Mar 2	0	0	1	1	0	11	11		
	<sup>1</sup> Traps in field since 12/21								

Zone 6 - Pistachio									
Pheromone/PPO Lure Baited Traps									
	# of								
	Releases								
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female		
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total		
<sup>1</sup> Dec 21 - Jan 11	0	0	0	0	0	0	0		
Jan 11 - Jan 19	0	0	1	1	0	0	0		
Jan 19 - Jan 25	0	0	0	0	0	0	0		
Jan 25 - Feb 1	0	0	0	0	0	0	0		
Feb 1 - Feb 8	0	0	0	0	0	0	0		
Feb 8 - Feb 15	0	0	3	3	0	0	0		
Feb 15 - Feb 22	0	0	3	3	0	0	0		
Feb 22 - Mar 2	0	0	2	2	0	1	1		
<sup>1</sup> Traps in field since 12/21									

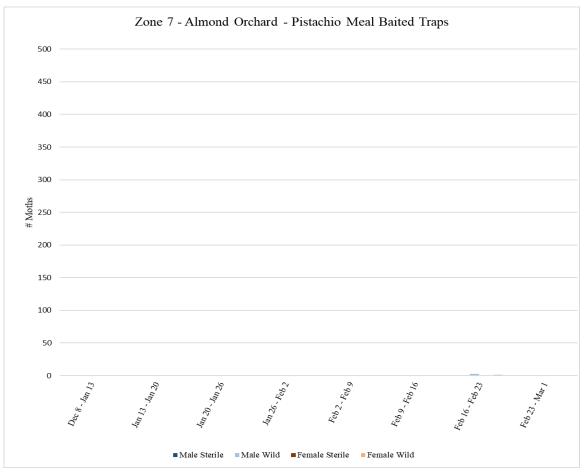


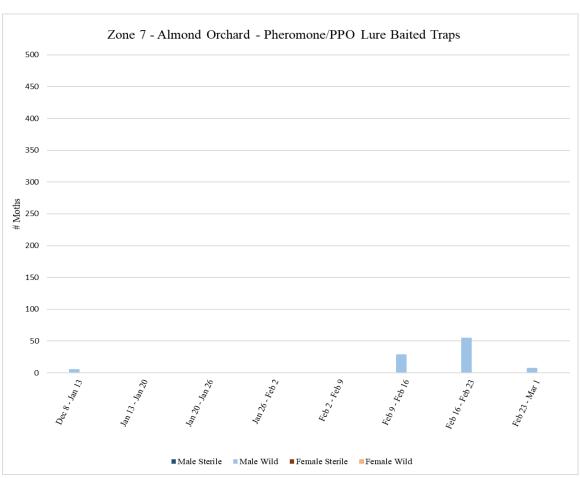


**Zone 7**Zone 7 is an almond orchard where aerial NOW SIT releases will be conducted. A total of **72** traps were collected from Zone 7 on <u>Tuesday</u>, <u>March 1</u>, with **36** pistachio meal baited traps and **36** pheromone/PPO lure traps.

Zone 7 - Almond									
Pistachio Meal Baited Traps									
	# of								
	Releases								
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female		
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total		
<sup>1</sup> Dec 8 - Jan 13	0	0	0	0	0	0	0		
Jan 13 - Jan 20	0	0	0	0	0	0	0		
Jan 20 - Jan 26	0	0	0	0	0	0	0		
Jan 26 - Feb 2	0	0	0	0	0	0	0		
Feb 2 - Feb 9	0	0	0	0	0	0	0		
Feb 9 - Feb 16	0	0	0	0	0	0	0		
Feb 16 - Feb 23	0	0	3	3	0	1	1		
Feb 23 - Mar 1	0	0	0	0	0	0	0		
<sup>1</sup> Traps in field since 12/8									

Zone 7 - Almond									
Pheromone/PPO Lure Baited Traps									
	# of								
	Releases								
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female		
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total		
<sup>1</sup> Dec 8 - Jan 13	0	0	6	6	0	0	0		
Jan 13 - Jan 20	0	0	0	0	0	0	0		
Jan 20 - Jan 26	0	0	0	0	0	0	0		
Jan 26 - Feb 2	0	0	0	0	0	0	0		
Feb 2 - Feb 9	0	0	0	0	0	0	0		
Feb 9 - Feb 16	0	0	29	29	0	0	0		
Feb 16 - Feb 23	0	0	55	55	0	0	0		
Feb 23 - Mar 1	0	0	8	8	0	0	0		
	<sup>1</sup> Traps in field since 12/8								





**Zone 8**Zone 8 is an almond orchard where aerial NOW SIT releases will not be conducted. A total of **18** traps were collected from Zone 8 on Wednesday, March 2, with **9** pistachio meal baited traps and **9** pheromone/PPO lure traps.

Zone 8 - Almond									
Pistachio Meal Baited Traps									
	# of								
	Releases								
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female		
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total		
<sup>1</sup> Dec 21 - Jan 11	0	0	0	0	0	0	0		
Jan 11 - Jan 19	0	0	0	0	0	0	0		
Jan 19 - Jan 25	0	0	0	0	0	0	0		
Jan 25 - Feb 1	0	0	0	0	0	0	0		
Feb 1 - Feb 8	0	0	0	0	0	0	0		
Feb 8 - Feb 15	0	0	0	0	0	0	0		
Feb 15 - Feb 22	0	0	1	1	0	0	0		
Feb 22 - Mar 2	0	0	0	0	0	0	0		
<sup>1</sup> Traps in field since 12/21									

Zone 8 - Almond									
Pheromone/PPO Lure Baited Traps									
	# of								
	Releases								
Dates Traps in	During Trap	Male	Male	Male	Female	Female	Female		
Field	Period	Sterile	Wild	Total	Sterile	Wild	Total		
<sup>1</sup> Dec 21 - Jan 11	0	0	0	0	0	0	0		
Jan 11 - Jan 19	0	0	0	0	0	0	0		
Jan 19 - Jan 25	0	0	0	0	0	0	0		
Jan 25 - Feb 1	0	0	0	0	0	0	0		
Feb 1 - Feb 8	0	0	0	0	0	0	0		
Feb 8 - Feb 15	0	0	2	2	0	1	1		
Feb 15 - Feb 22	0	0	19	19	0	0	0		
Feb 22 - Mar 2	0	0	2	2	0	0	0		
	<sup>1</sup> Traps in field since 12/21								

