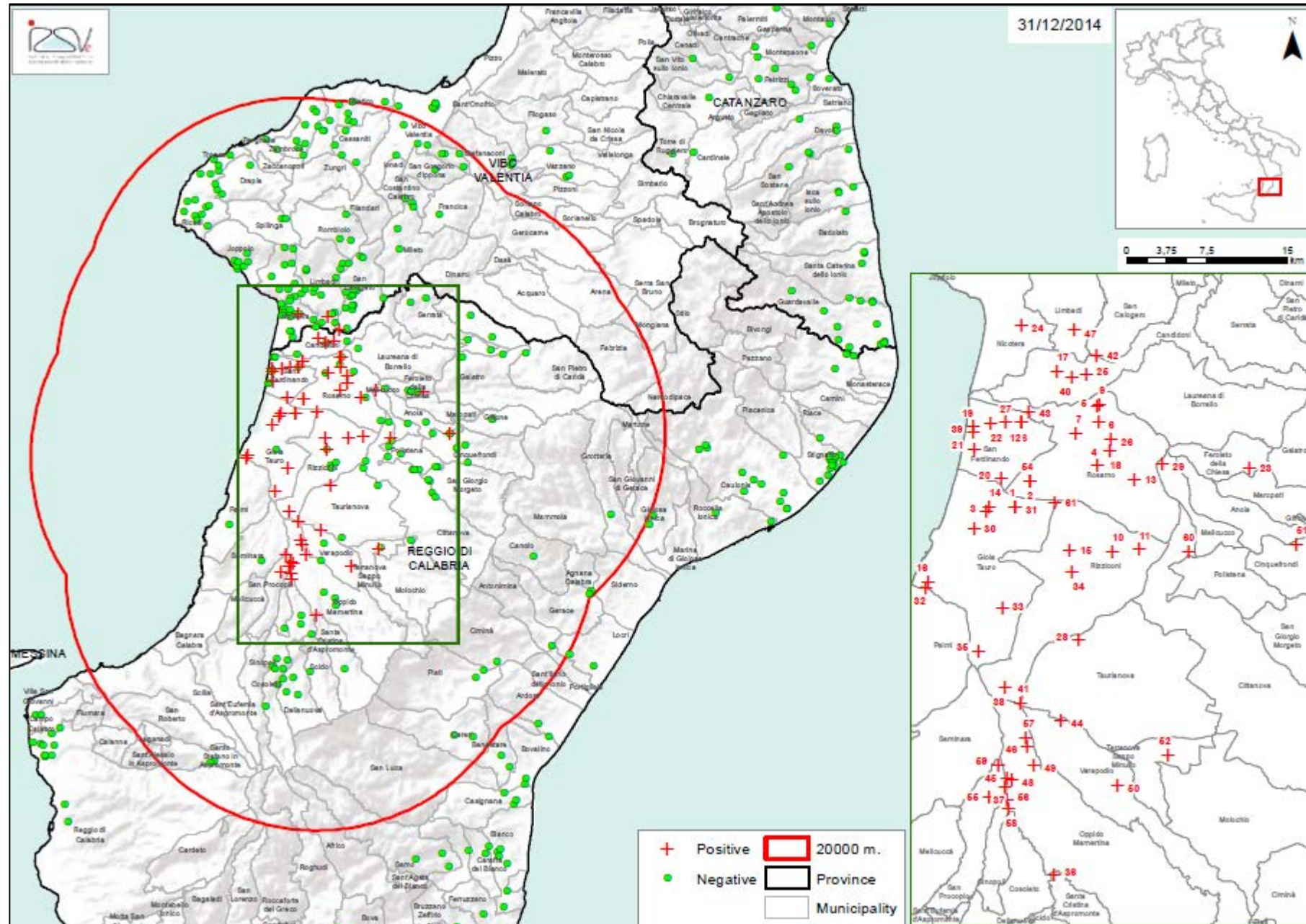


Small hive beetle in Italy: update, surveillance and recent incidents

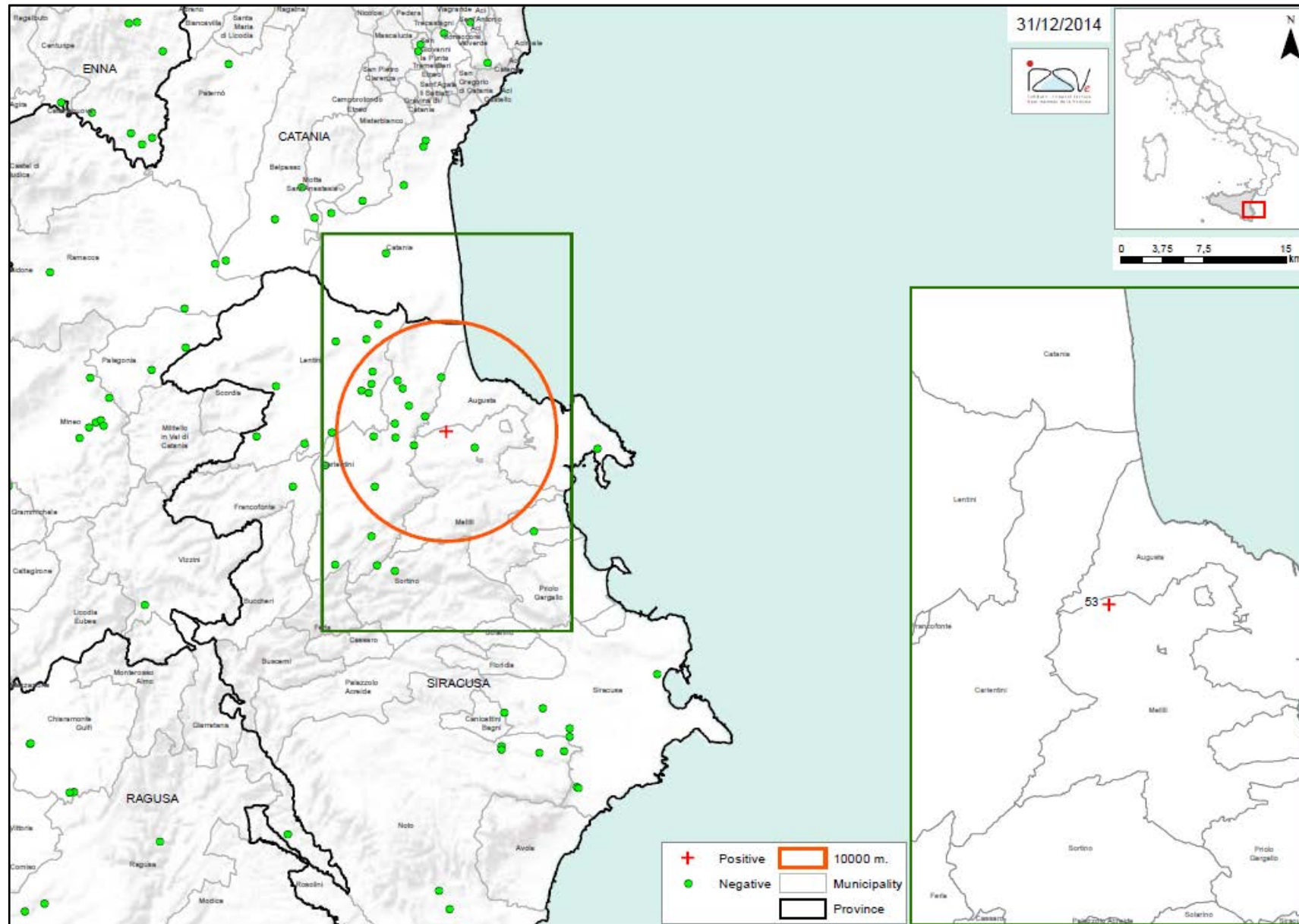
Franco Mutinelli

National Reference Laboratory for beekeeping
Istituto Zooprofilattico Sperimentale delle Venezie
Viale dell'Università, 10
35020 Legnaro (PD), Italy
E-mail: fmutinelli@izsvenezie.it

2014 - Calabria region: 60 infested apiaries

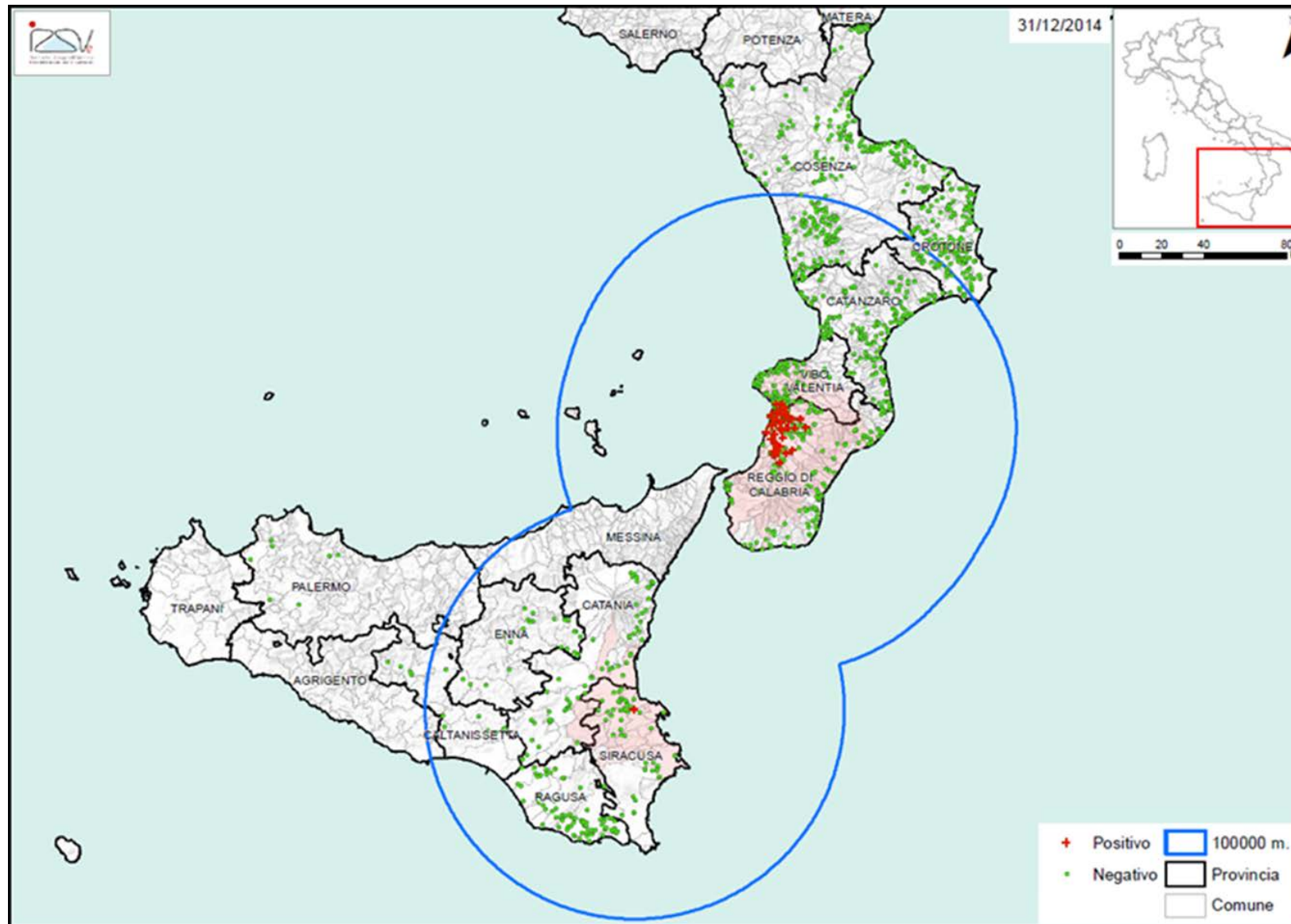


Sicily region - 7 November 2014



- Melilli (SR) municipality
- migratory apiary with 56 hives
- in the Gioia Tauro area from April to August 2014

Surveillance 2014



Eradication and/or containment of the infestation

Measures applied

- Immediate notification of *Aethina tumida*
- Restriction of any movement related to honey bee colonies (IN and OUT)
- Census of apiaries and colonies

20 km protection zone:

- census of apiaries
- visit of all apiaries
- visit of the colonies according to 5% expected prevalence
- **destruction** of the infested apiaries (@3,200 hives in 2014; @2,900 in 2015) and **compensation**
- if negative, traps should be applied
- traceability of commercial and migratory movement in and out of the zone



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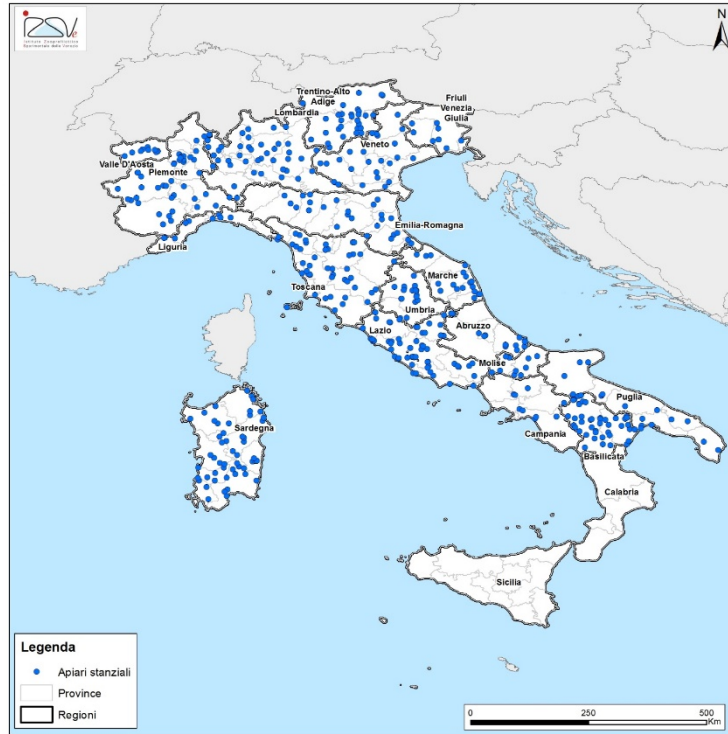
Measures applied

Surveillance zone (The whole territory of the two concerned regions):

- census of apiaries
- visit of apiaries selected on the basis of risk analysis (migration in infested areas, honeybees or materials exchanges) or randomly
- visit of the colonies according to 2% expected prevalence
- destruction of infested apiaries
- if negative, traps should be applied
- traceability of commercial and migratory movement in and out of the zone

 No positive apiaries in the surveillance zone

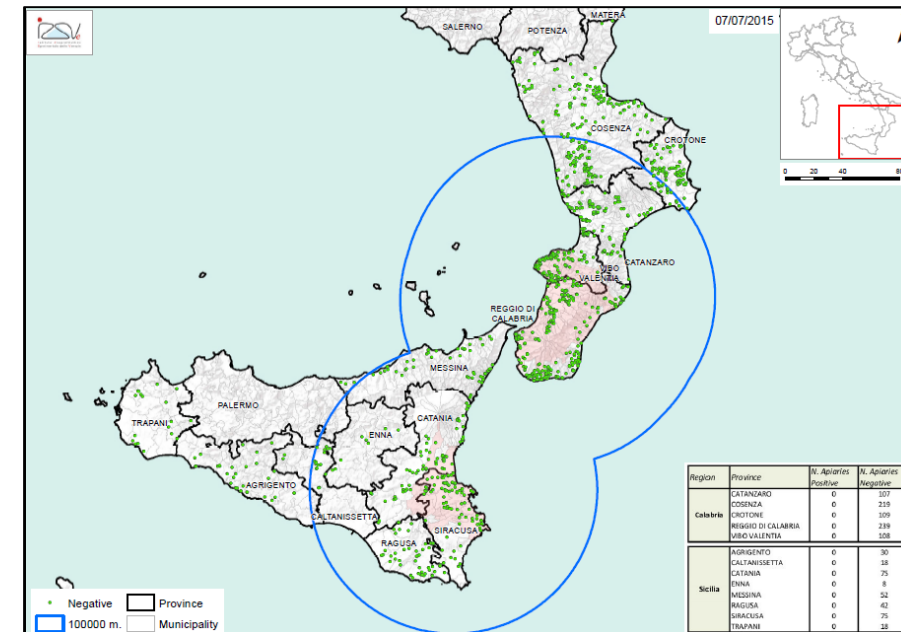
National surveillance plan 2015 - non migratory apiaries randomly selected



National surveillance plan 2015 - migratory apiaries (risk-based)



Surveillance plan 2015 - Calabria and Sicily



SHB re-occurrence – September 2015

September 16, 2015

One apiary in Taurianova municipality
30 artificial swarms (6.08.15) + 2 natural swarms
(captured on site, 16 and 22.08.15)

September 28, 2015

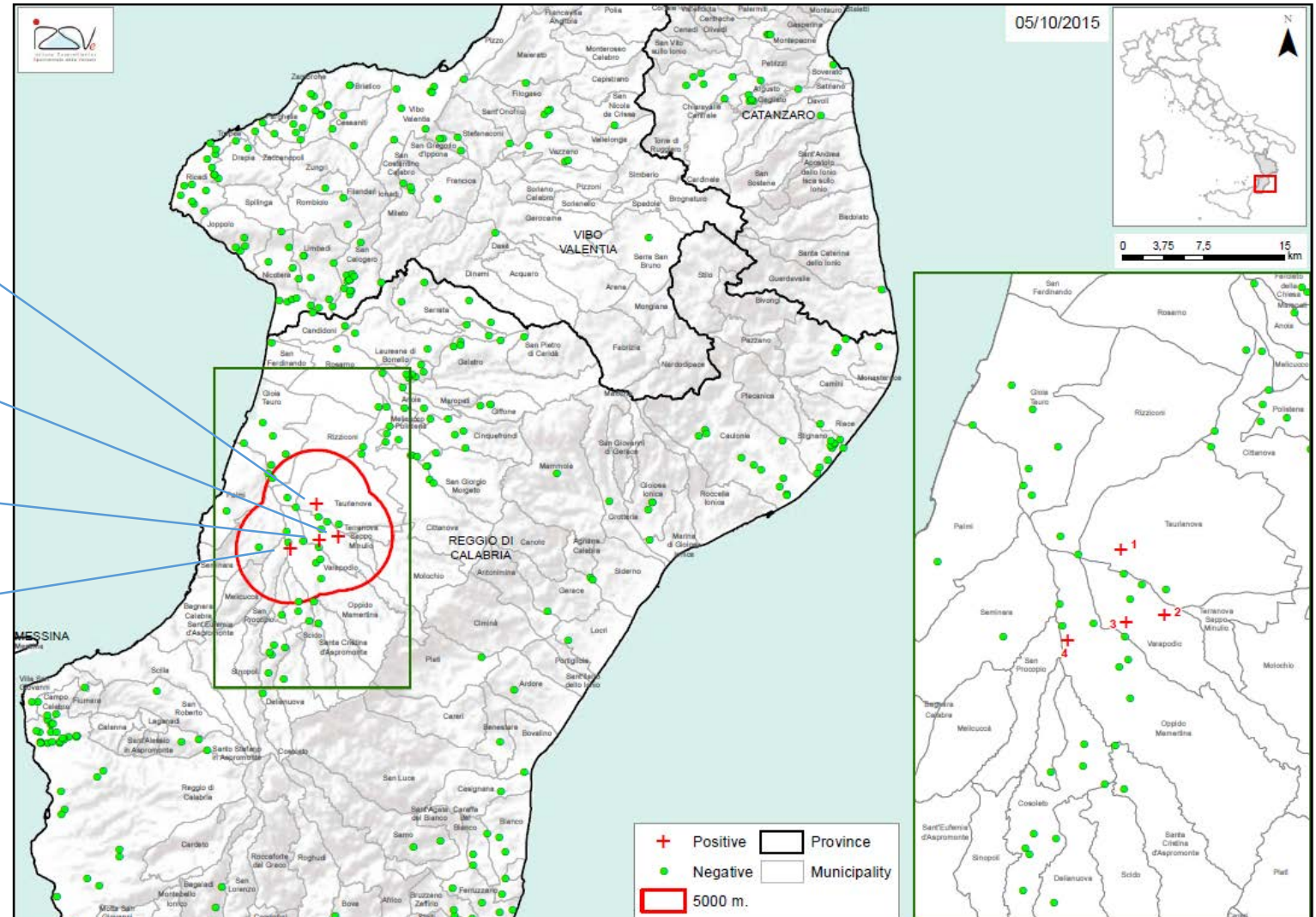
One apiary in Varapodio municipality
66 beehives

September 28, 2015

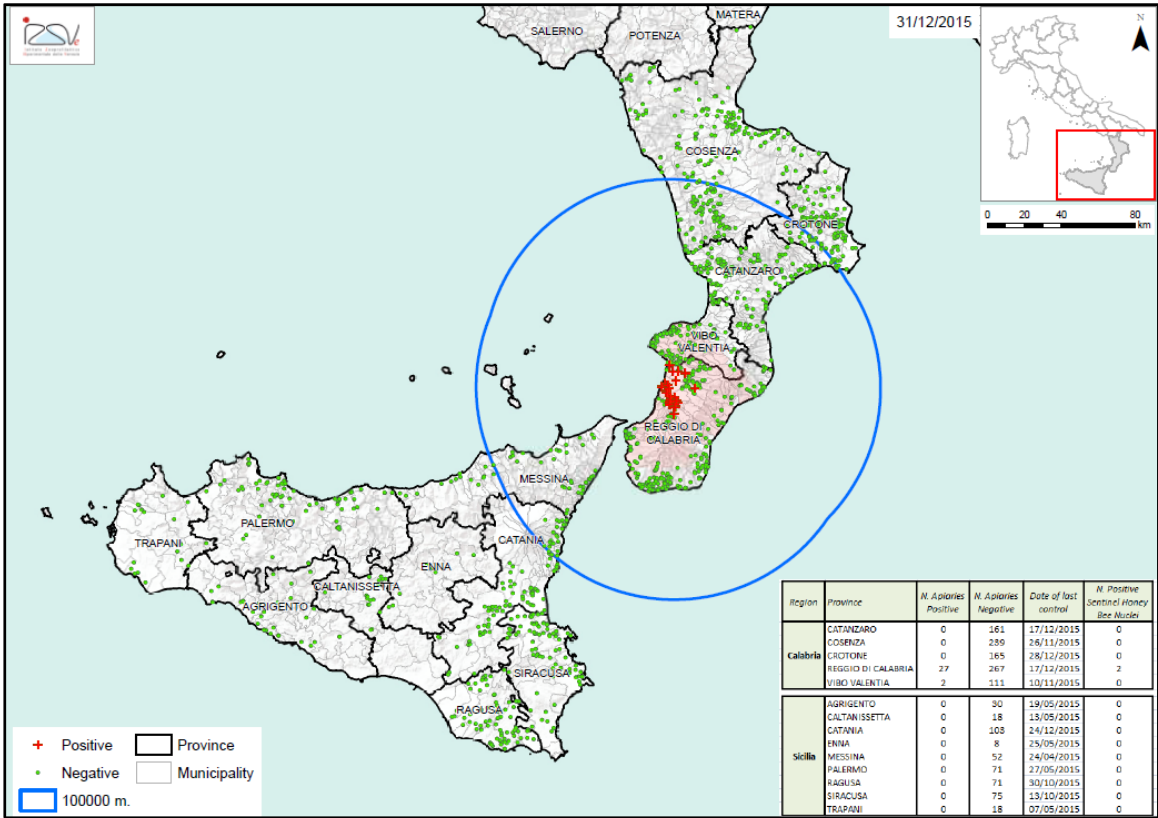
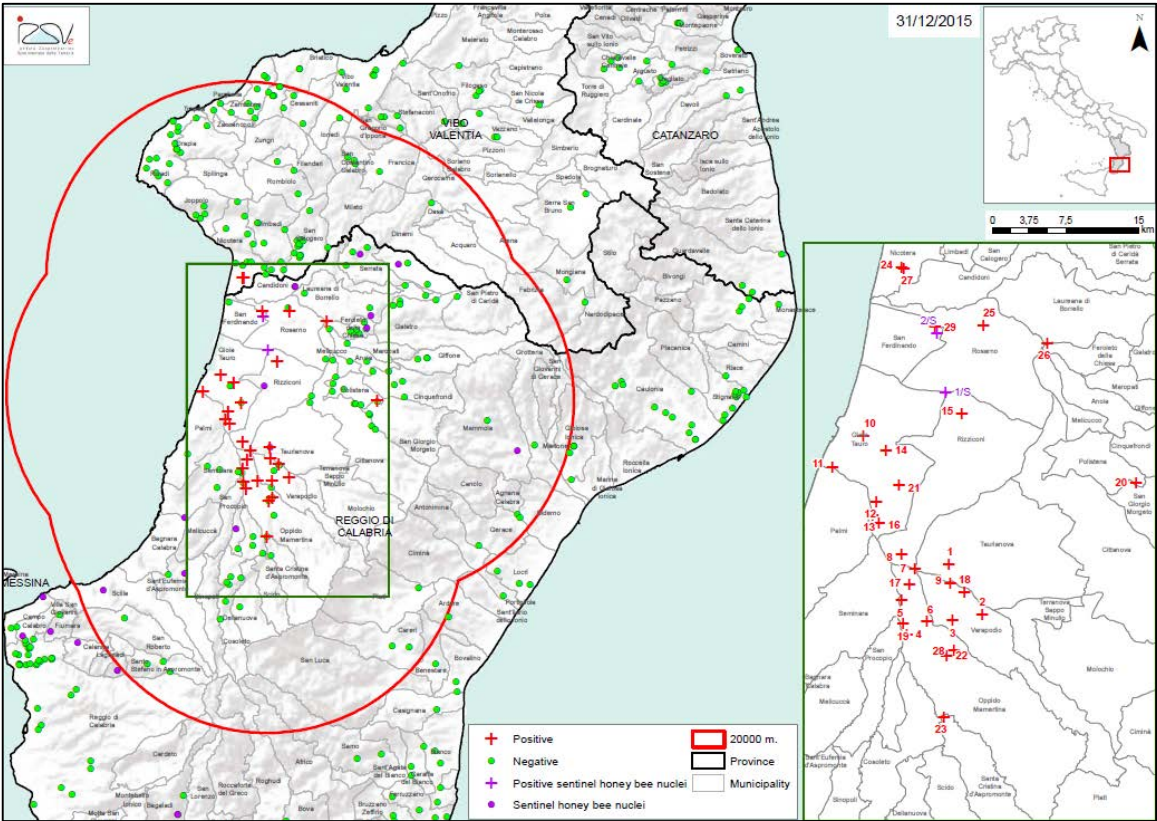
One apiary in Varapodio municipality
92 beehives

September 29, 2015

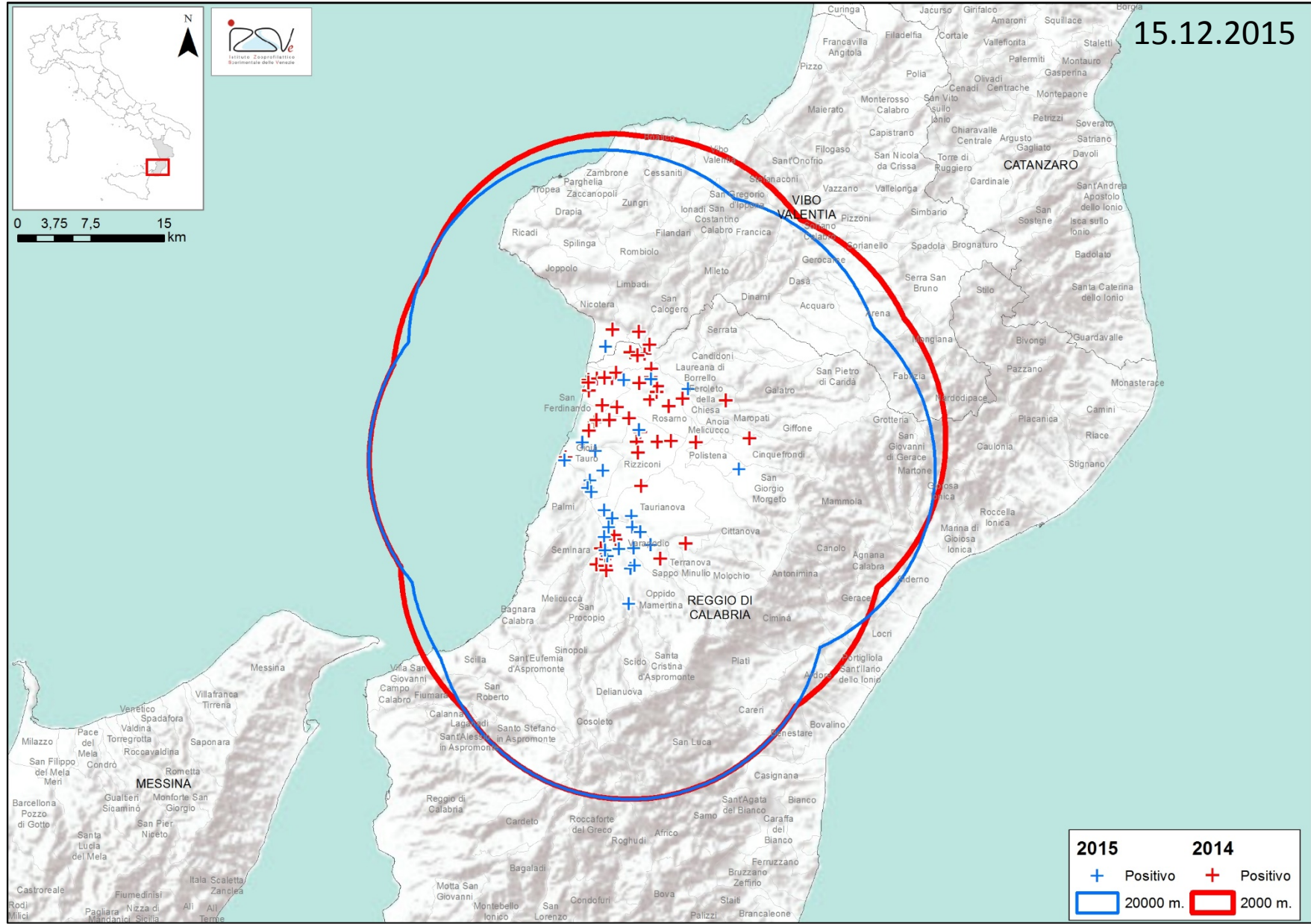
One apiary in Oppido Mamartina municipality
60 swarms (27.04.15)



The situation as of 31 December 2015: 29 infested apiaries



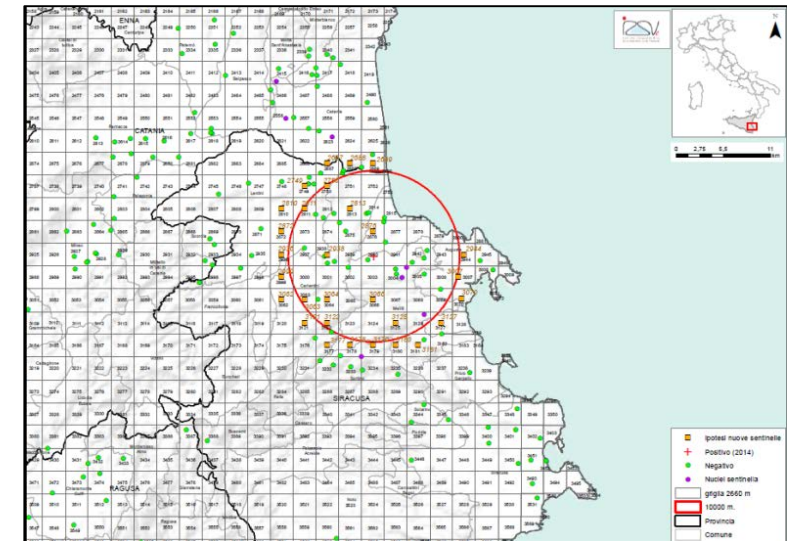
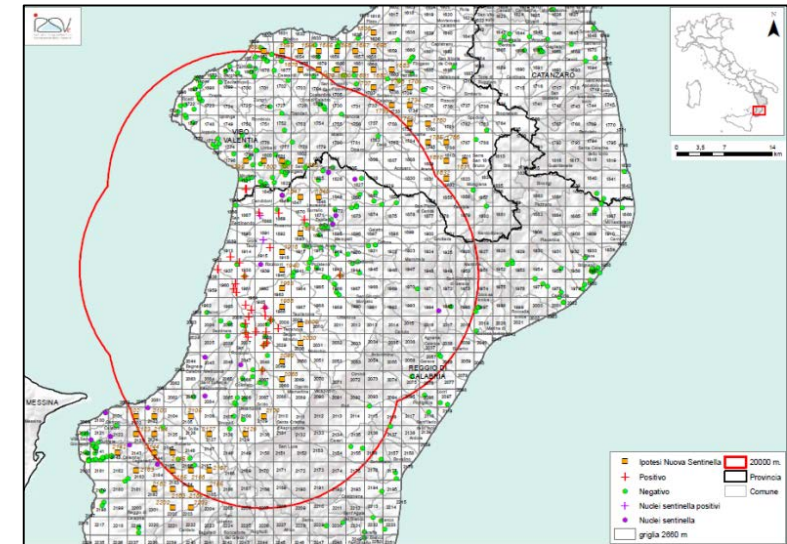
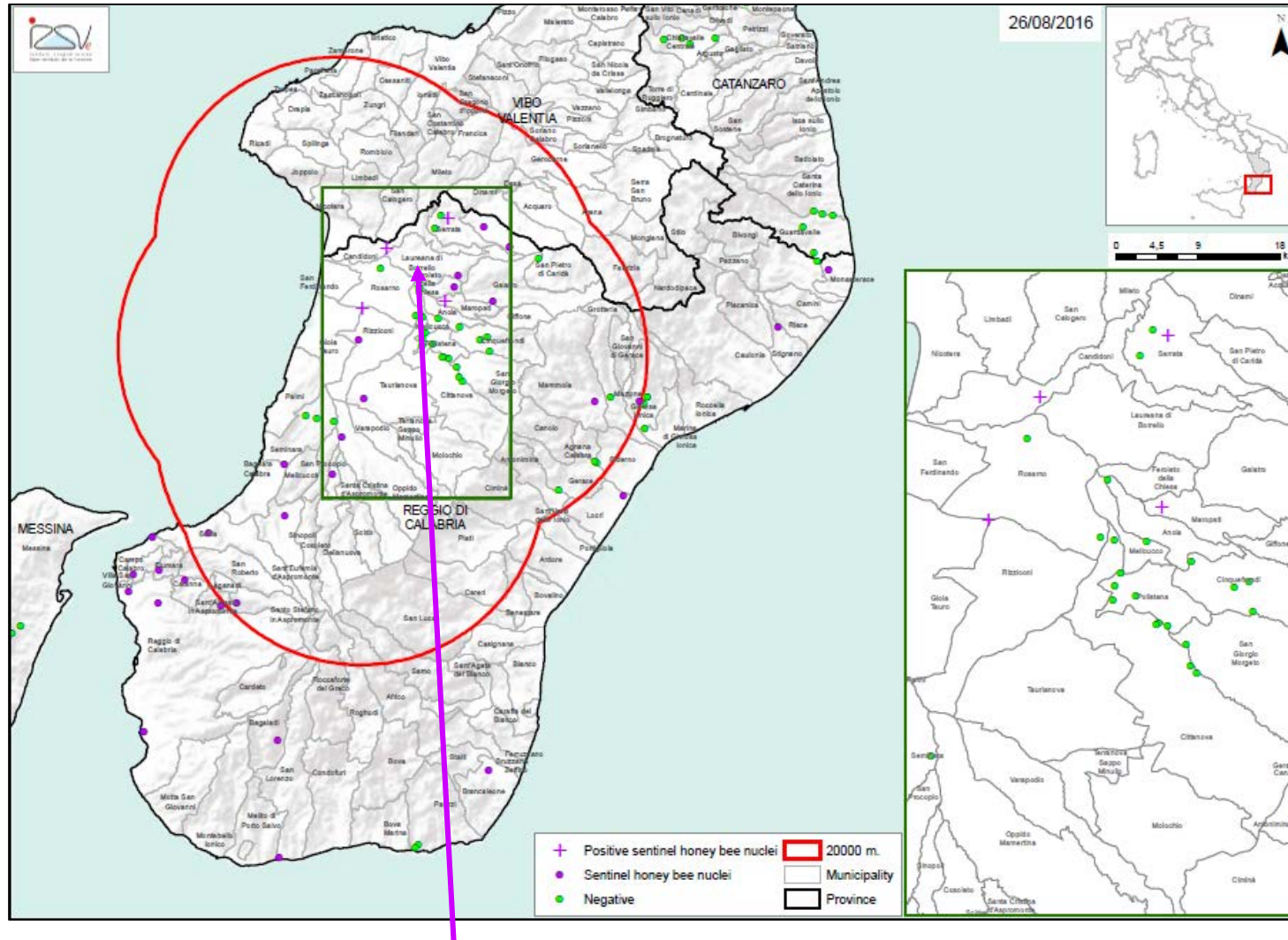
Comparison between 2014 (red) e 2015 (blue) infested apiaries



SHB surveillance program - Italy - 2016

Territory	Epidemiological units	N. apiaries	N. hives for apiary
Italy (excluded Calabria and Sicily)	Northern	177 non migratory random selected (2% expected prevalence CI 95%)	2% expected prevalence CI 95%
	Central	170 non migratory random selected (2% expected prevalence CI 95%)	2% expected prevalence CI 95%
	Southern	163 non migratory random selected (2% expected prevalence CI 95%)	2% expected prevalence CI 95%
Region	Territory/zones	N. apiaries	N. hives for apiary
Sicily	Catania Siracusa Ragusa	134 non migratory random selected (2% expected prevalence CI 95%)	5% expected prevalence CI 95%
	rest of territory	198 non migratory random selected (2% expected prevalence CI 95%)	5% expected prevalence CI 95%
Region	Territory/zones	N. apiaries	N. hives for apiary
Calabria	protection zone	53 apiaries	5% expected prevalence CI 95%
	surveillance zone + the rest of territory	147 random (2% expected prevalence CI 95%)	5% expected prevalence CI 95%

Calabria region: April - August 2016



4 honey bee sentinel units (8 nucleus colonies) have been found infested by SHB adults

New SHB incident on 25-28 July 2016 in the province of Cosenza (Calabria region)

An unregistered beekeeper, 6 apiaries

4 infested apiaries destroyed (128 colonies)

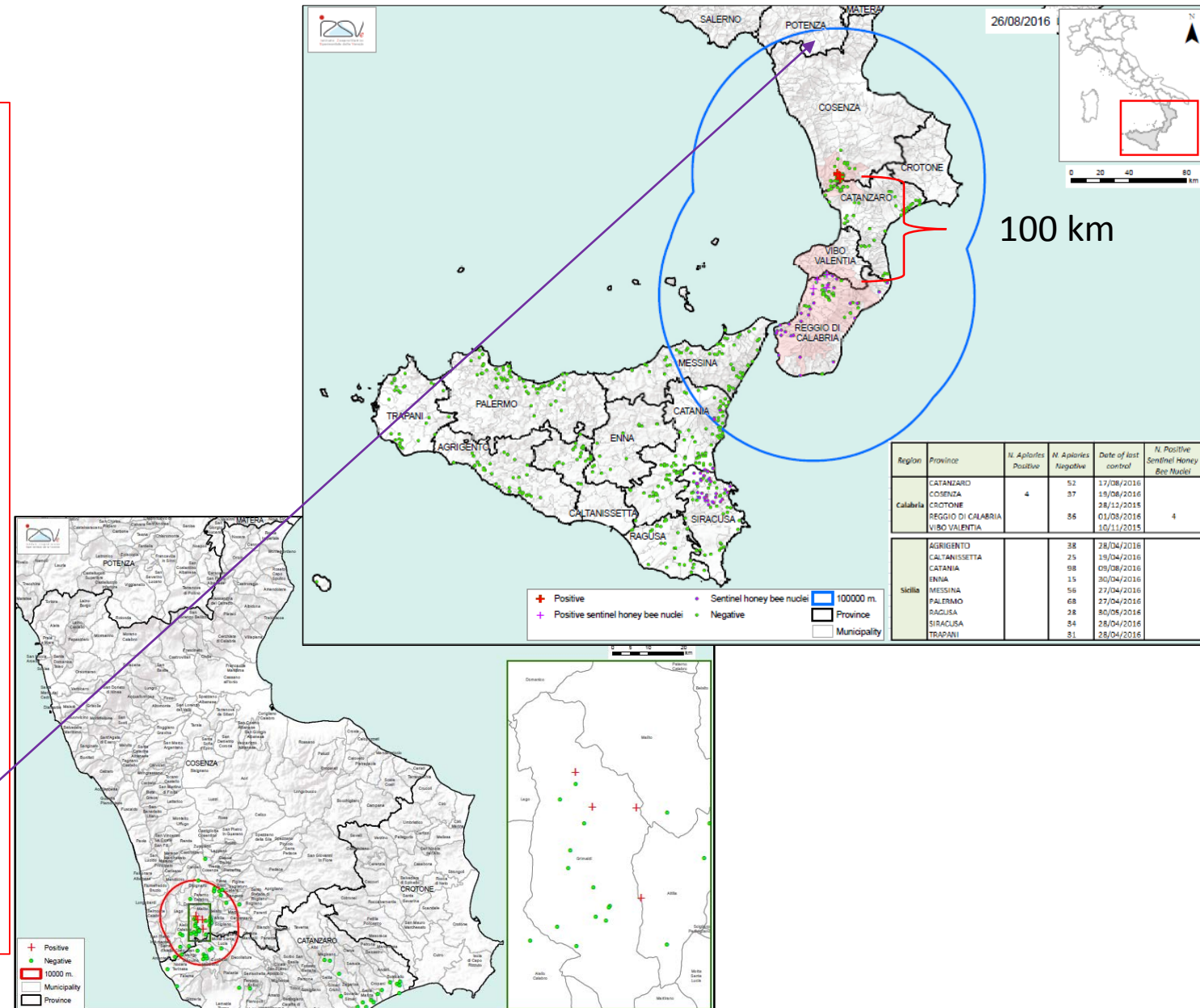
2 negatives still alive (115 colonies)

On 12/9, 1 apiary found infested and destroyed (70 colonies)

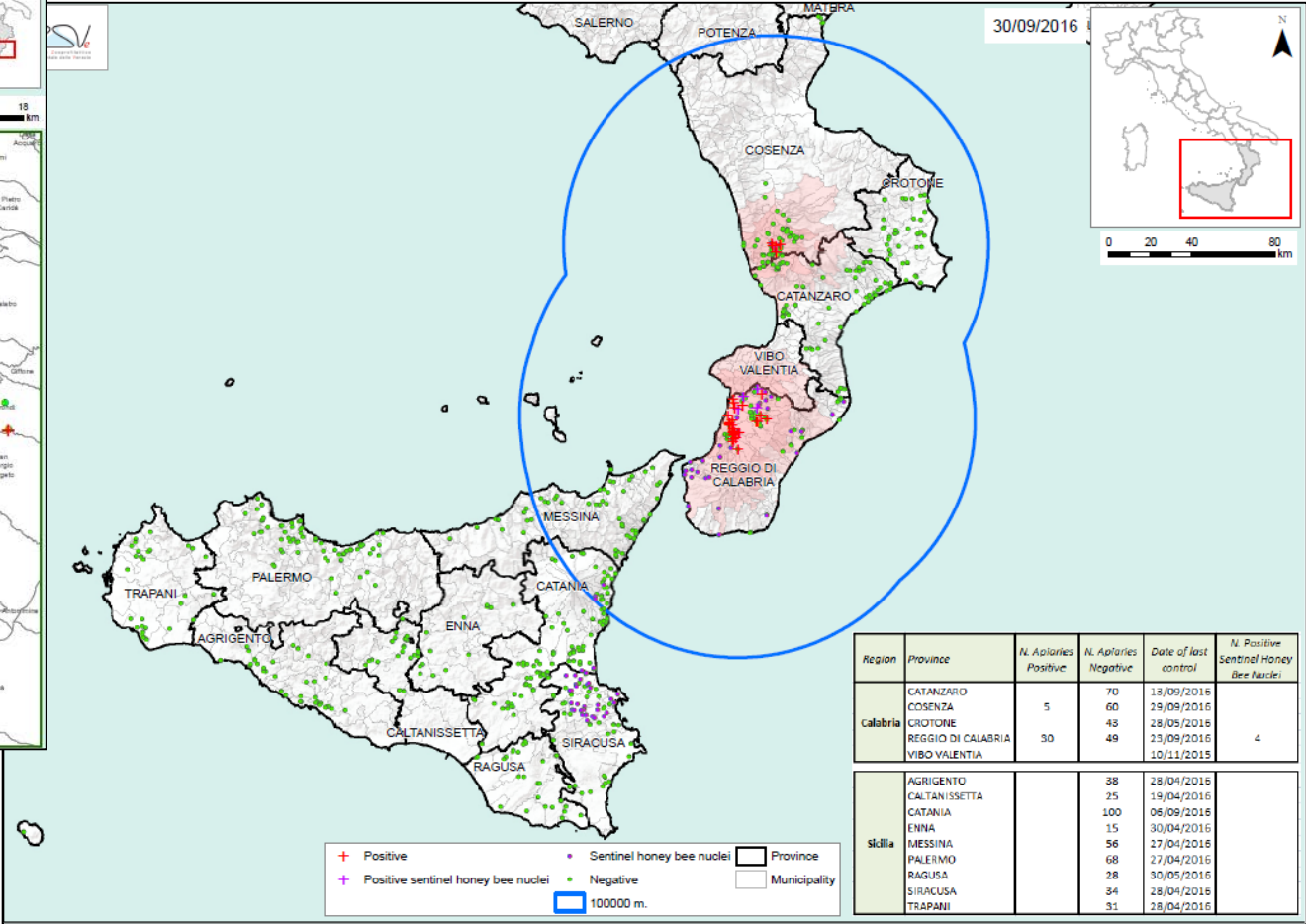
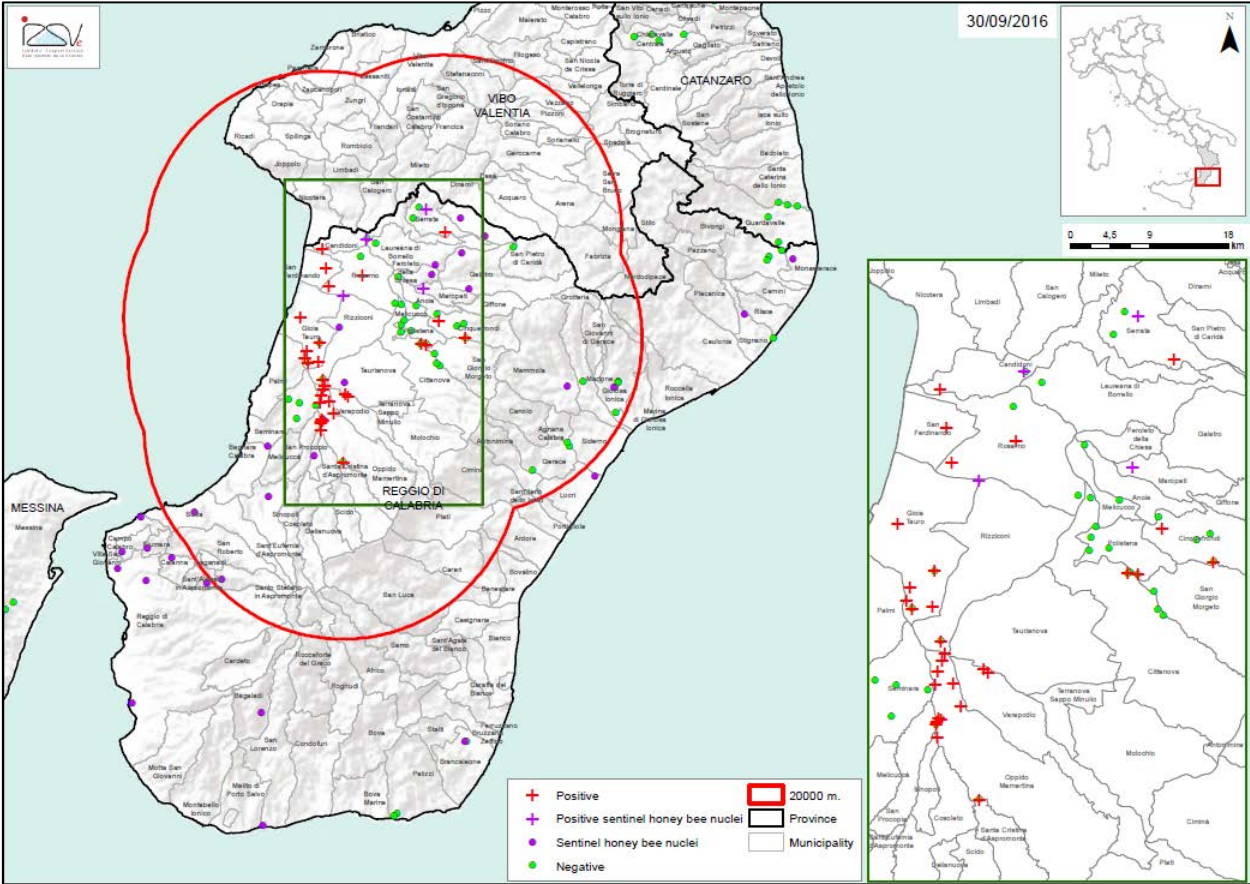
Protection zone = 10 km

Surveillance zone = the whole territory of the Calabria region

Potenza province, Basilicata region: Directive 92/65/EEC

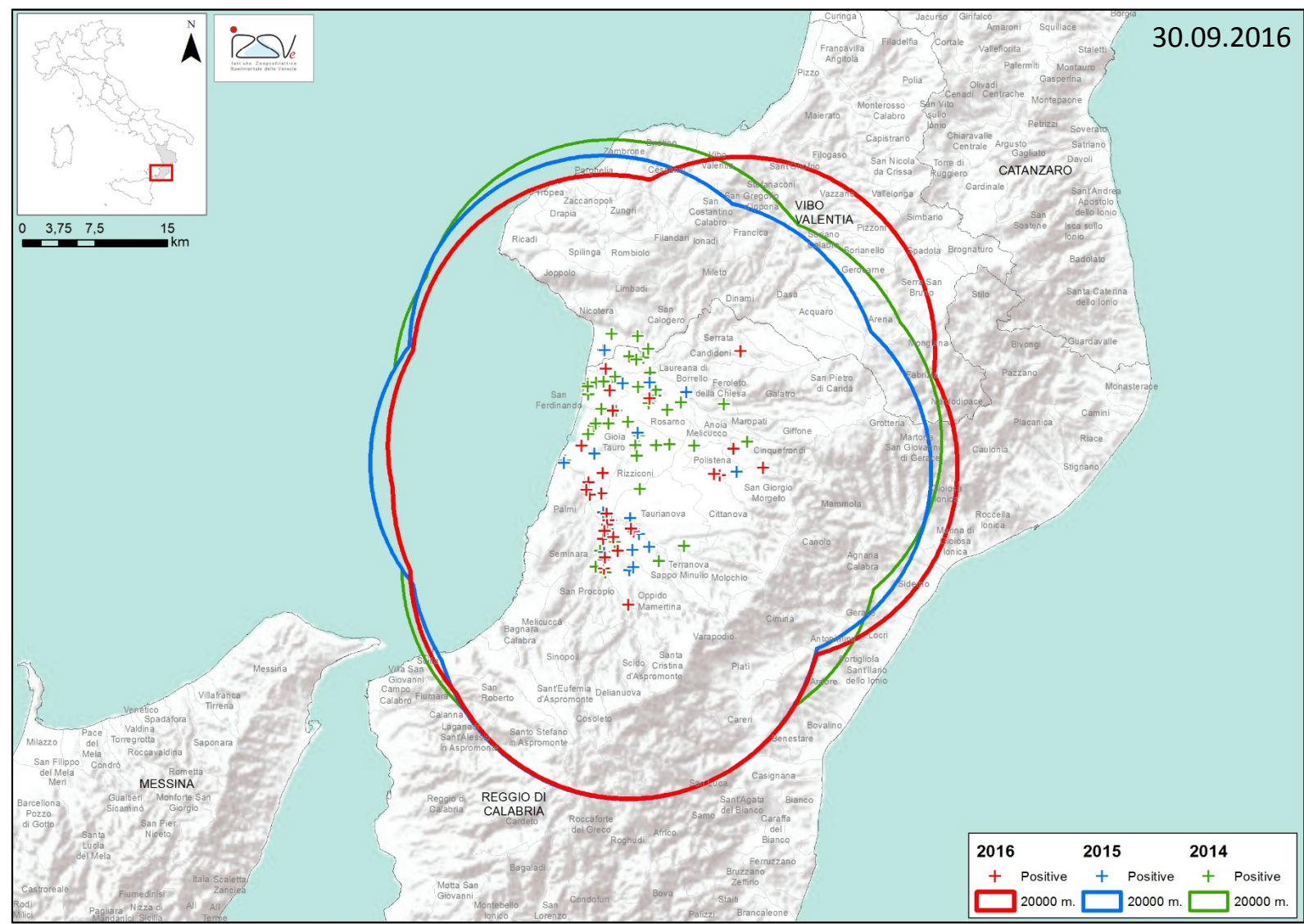


The situation as of 30 September 2016: 30 infested apiaries notified by beekeepers (13-23 September)



Region	Province	N. Apiaries Positive	N. Apiaries Negative	Date of last control	N. Positive Sentinel Honey Bee Nuclei
Calabria	CATANZARO	5	70	13/09/2016	4
	COSENZA		60	29/09/2016	
	CROTONE		43	28/05/2016	
	REGGIO DI CALABRIA	30	49	23/09/2016	
Sicilia	AGRIGENTO		38	28/04/2016	
	CALTANISSETTA		25	19/04/2016	
	CATANIA		100	06/09/2016	
	ENNA		15	30/04/2016	
	MESSINA		56	27/04/2016	
	PALERMO		68	27/04/2016	
	RAGUSA		28	30/05/2016	
	SIRACUSA		34	28/04/2016	
	TRAPANI		31	28/04/2016	

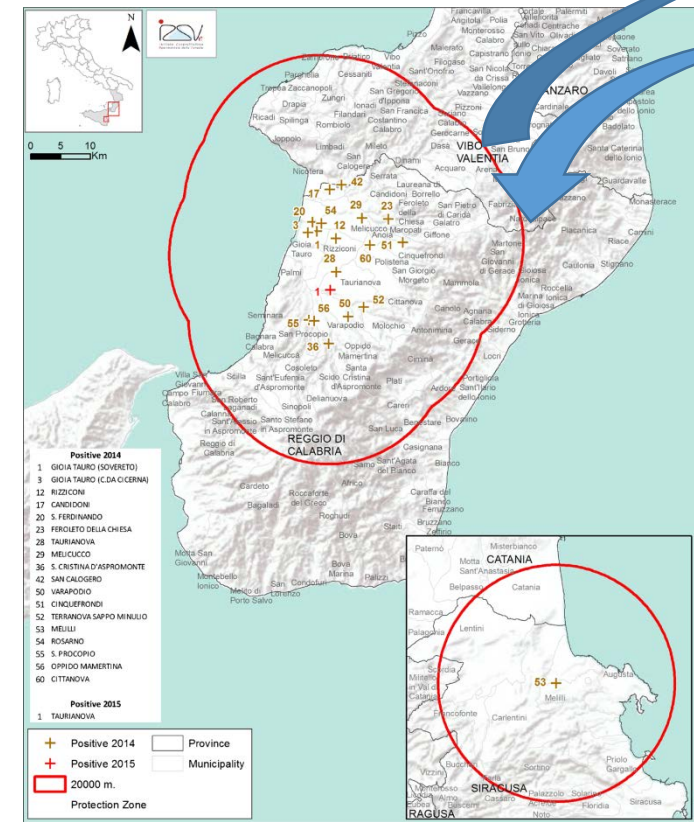
Comparison between 2014 (green), 2015 (blue) and 2016 (red) infested apiaries



Aethina tumida: phylogenetic analysis

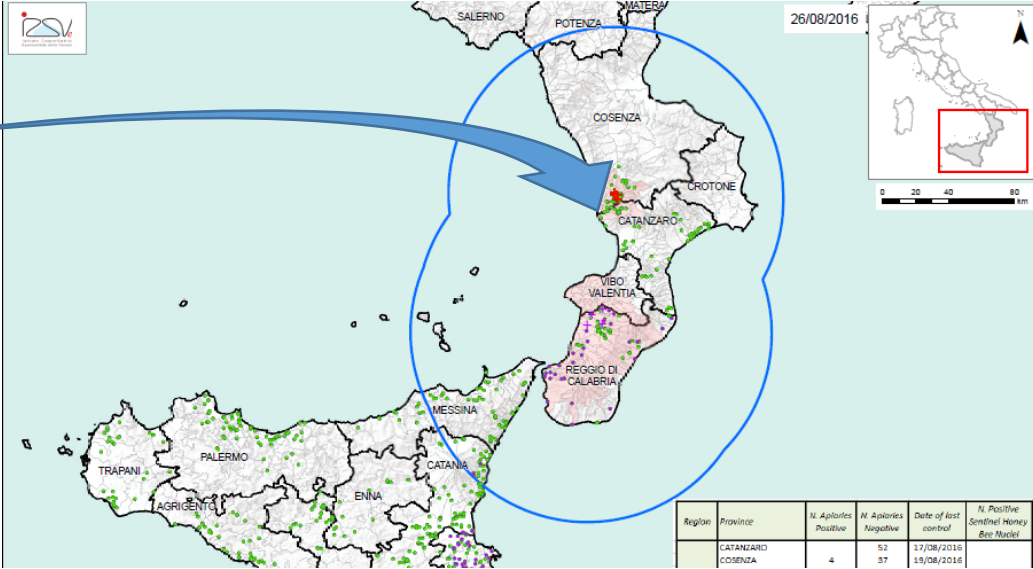
(Granato et al., 2016)

Reggio Calabria – 2014 and 2015

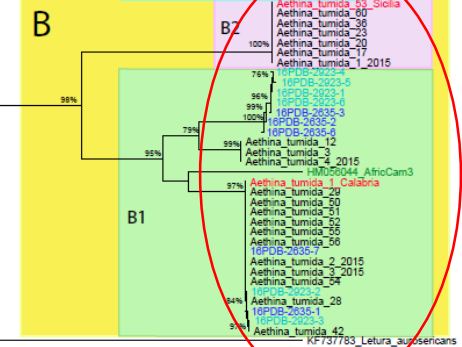
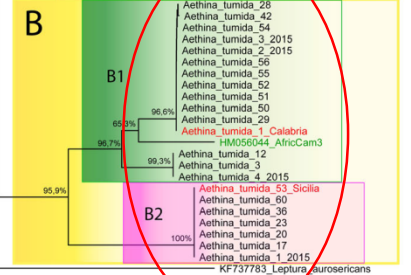
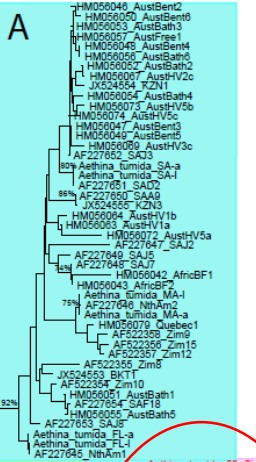
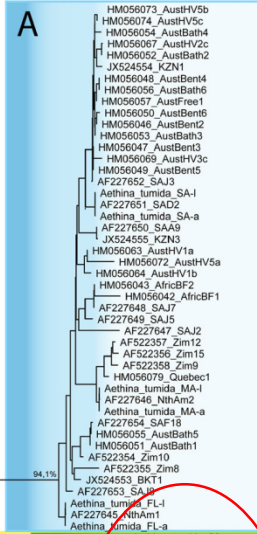


Africa

Cosenza – 25 July 2016



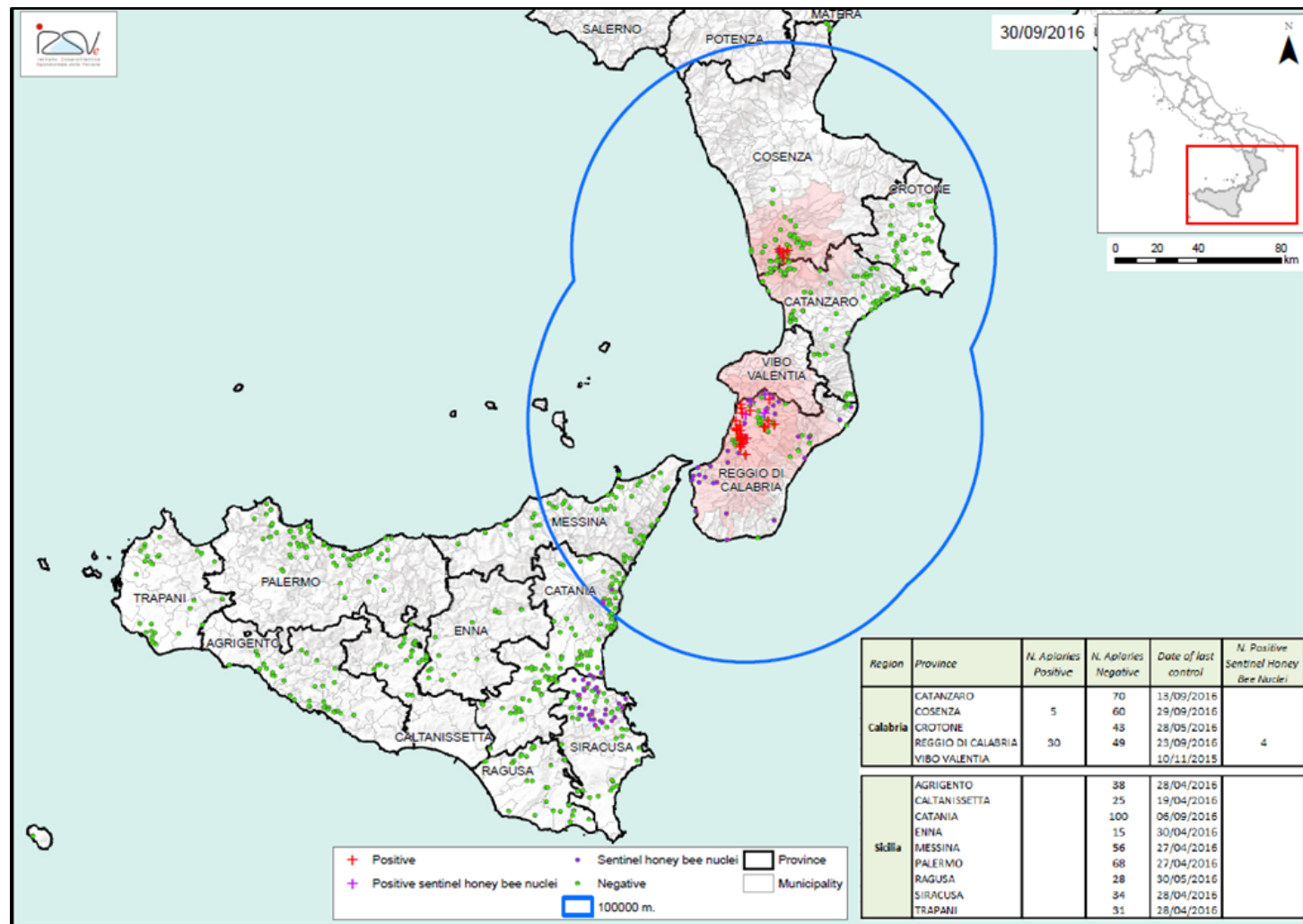
Region	Province	N. Apolone Positive	N. Apolone Negative	Date of last control	N. Positive Sentinel Honey Bee Model
CATANZARO		4	52	17/08/2016	
COSENZA		37	14/06/2016		



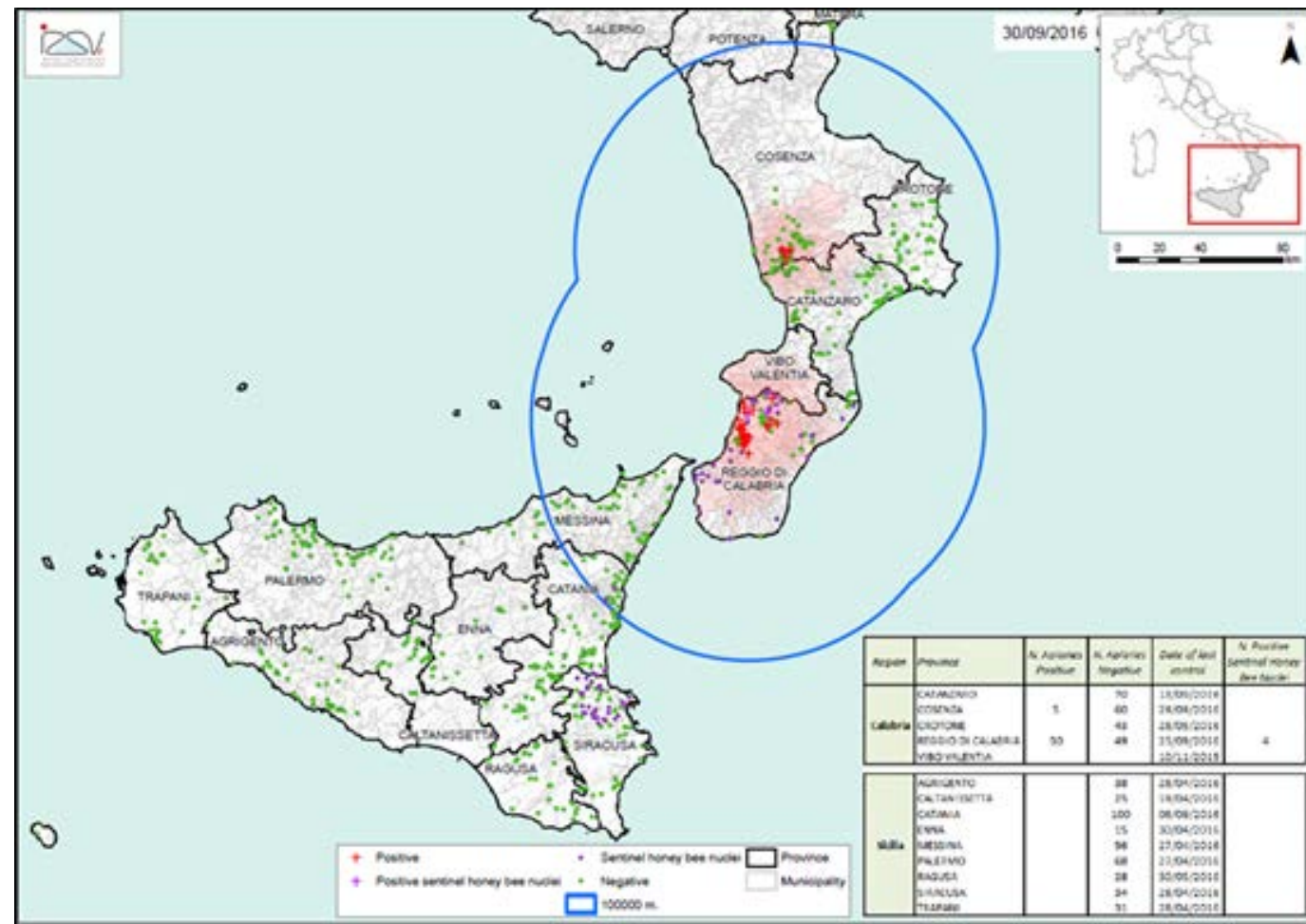
Conclusions

SHB occurrence:

- ✓ Calabria 2014, Reggio Calabria and Vibo Valentia provinces
- ✓ Calabria 2015, Reggio Calabria province
- ✓ Calabria 2016, Reggio Calabria province – **sentinel** honey bee nuclei and apiaries,
- ✓ **Cosenza** province
- ✓ Sicily 2014, Siracusa province – one infested apiary
- ✓ Potenza province (part of) under Directive 95/62/EEC

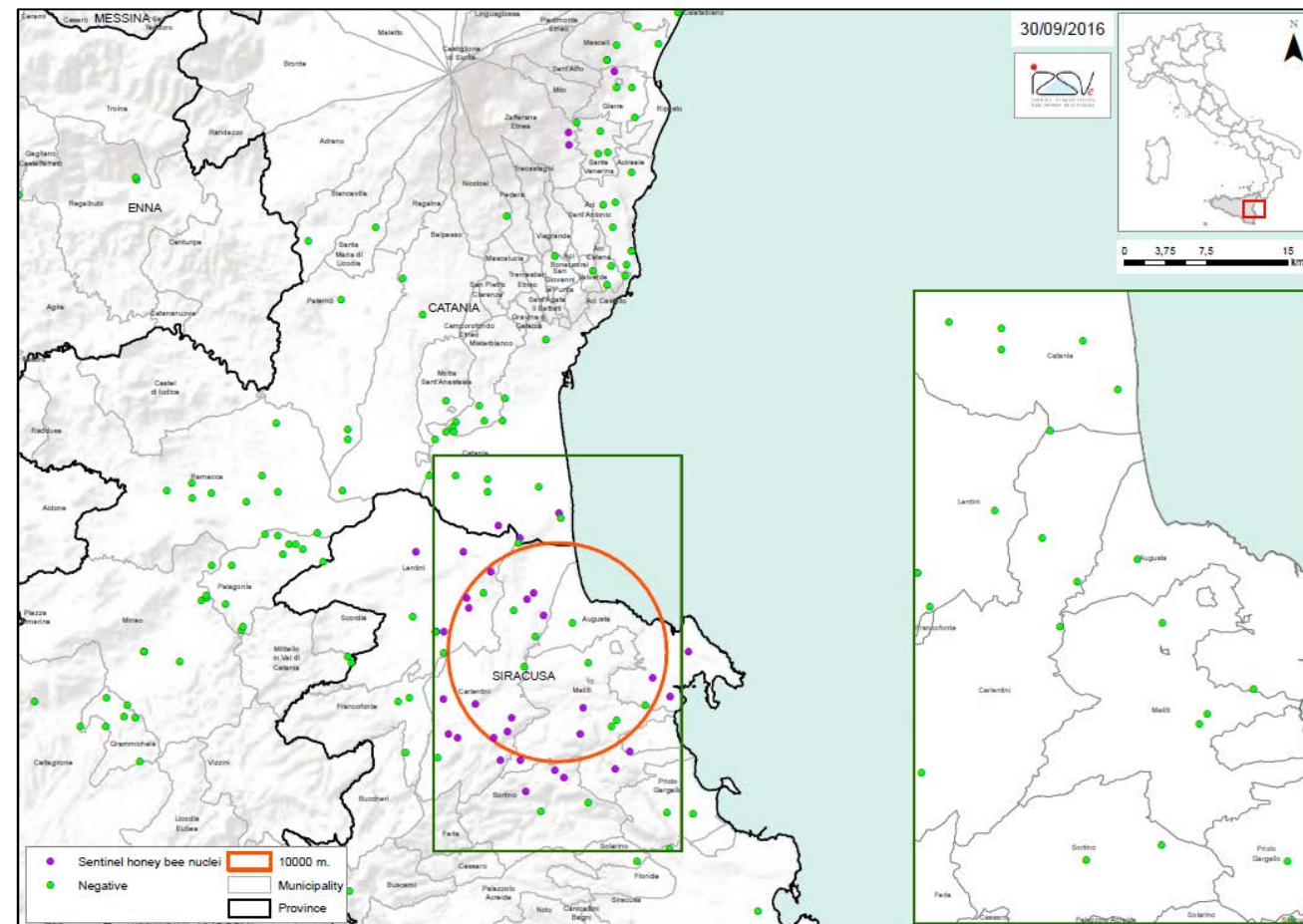


Perspectives - Calabria



- ✓ Protection zone = 20 km (province of Reggio Calabria and Vibo Valentia)
- ✓ Protection zone = 10 km (province of Cosenza)
- ✓ Surveillance zone = the whole territory of the region will be maintained

Perspectives - Sicily



- ✓ Protection zone = 10 km (province of Siracusa and Catania)
- ✓ The protection zone could be removed after 2 years without SHB detection (under evaluation)
- ✓ Surveillance zone = the whole territory of the region will be maintained

Freezing honey supers as a sanitising measure against SHB at any life stage



Honey supers should be stored in a -20°C freezer compartment for at least 71 (July trial, chestnut honey) and 83 (August trial, eucalyptus honey) hours respectively, to guarantee proper treatment at -12°C or lower for 24 hours

(Submitted, JAR 2016)



Thank you for your attention

<http://www.izsvenezie.com/aethina-tumida-in-italy/>