

European Cooperative Program for Plant Genetic Resources (ECPGR)

Institute for Adriatic Crops and Karst Reclamation,

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## **Increasing the efficiency of conservation of wild grapevine genetic resources in Europe**

Current status of *Vitis sylvestris* genetic resources in Germany

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## ***Introduction***



Linné did not mention  
*Vitis sylvestris* in his „  
**Systema Naturae**“.

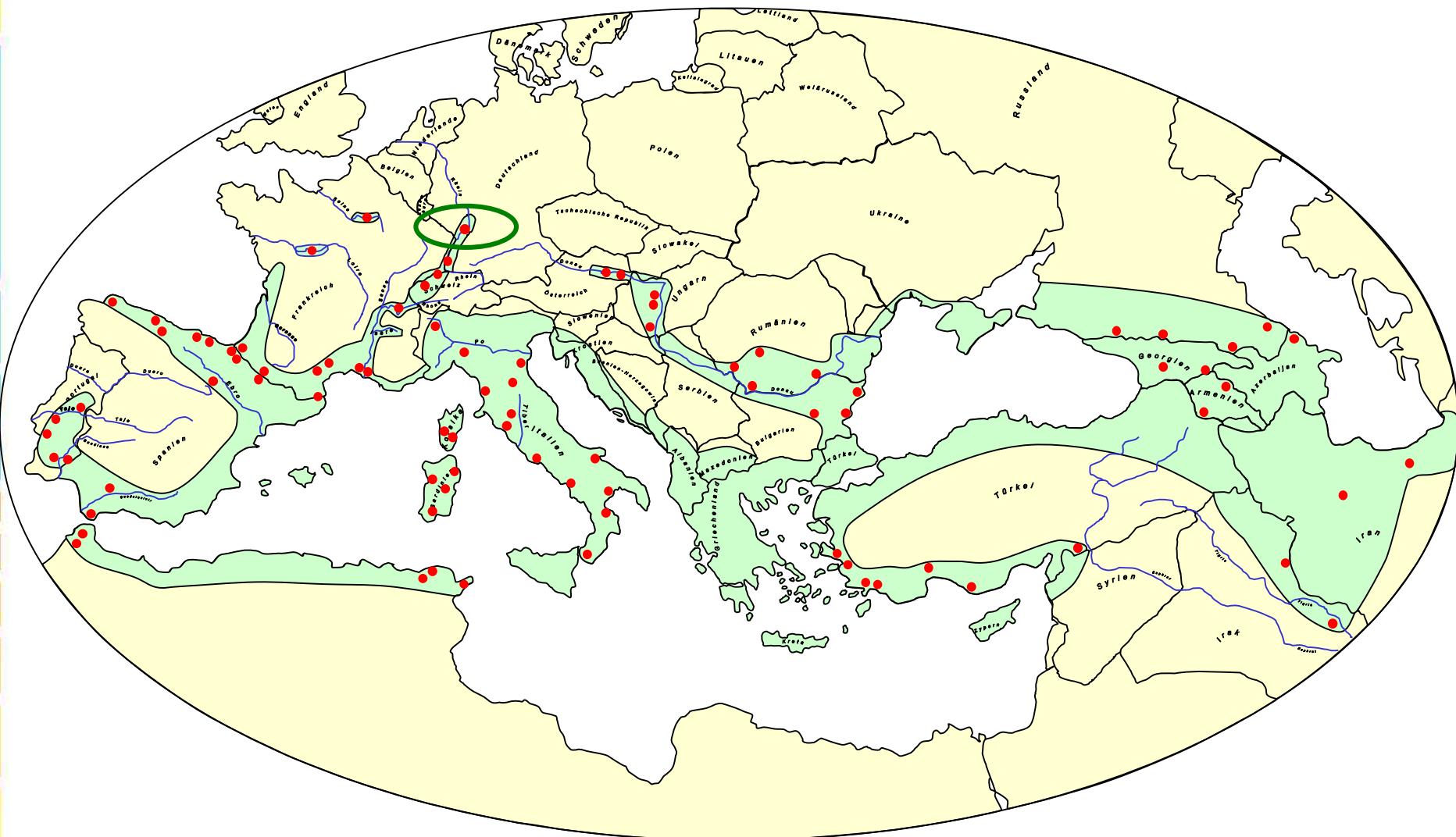


**Photo: Norbert R. Kowarsch**

Wild grape is even today an important genetic resource for quality and after the finding of Kishmish Vatkhana and Dzhandzhal Kara can be considered as a likely resource for resistance breeding.

Septentriional populations could be of interest in particular due to their cold tolerance.

# *Distribution of the European wild grape Vitis vinifera L. subsp. sylvestris (C. C. Gmelin) Hegi (Portugal to Afghanistan)*



■ Distribution of *Vitis vinifera* L. subsp. *sylvestris*

● Habitats published between 1998 and 2010

BOCK (1546): abundantly thriving wild grape between Straßburg and Speyer

BRONNER (1857): thousands of individuals occur in the Rhine Valley

SCHUMANN (1974): found on the Ketsch-Island 39 wild vines (3 of them were dead)

KRAMER (1987): in the Rhine Valley between Basel and Worms only 30 individuals survived.

SEBALD et al. (1992) announced in „*Die Farn- und Blütenpflanzen Baden-Württembergs*“ , that the wild grape was reduced in Baden Württemberg to 25 plants on a few sites between Mannheim and Karlsruhe.

ARNOLD et al. (2005) reported about 20 individuals existing in Alsace and the Rhine Valley.



Photo: Erika Maul, JKI

## Model- und Demonstrationsvorhaben (2008 – 2013)

Undertaking serving as an example for other crops

„Survival of the wild grape (*Vitis vinifera* L. subsp. *sylvestris*) in the Rhine flood plains through a directed *in-situ* maintenance“, financed by the Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz (BMELV) via the Bundesanstalt für Landwirtschaft und Ernährung (BLE).

Project leader: Gloria Ledesma-Krist from the WWF-Auen-Institut, Karlsruher Institut für Technologie (KIT),

Project partners: Botanisches Institut I (KIT), Botanischer Garten Karlsruhe (KIT) and Institut für Rebenzüchtung Geilweilerhof (JKI).

### Objectives:

- Safeguard of the remaining *Vitis sylvestris* diversity *in-situ* and *ex-situ*
- Preservation of the wild grape through reintroduction respectively establishment of viable and diverse populations at selected sites
- Continuation of evolutionary adaptation processes through reproductive linkage of habitats and the selection of appropriate sites.

# *Inventory of Vitis sylvestris individuals existing in the German Rhine Valley flood plains. (Stand Dezember 2013)*

The numbers in brackets represent the planted individuals in the scope of the project.

Department	Area	Wild grape		
		total	planted	spontaneous
Baden-Württemberg	Mannheim	59	56 (0)	3
	Ketsch	82	3 (1)	79
	Regierungsbezirk Karlsruhe	ca. 165	ca. 164 (0)	1
Rheinland-Pfalz	Otterstadt	7	6 (0)	1
Rheinland-Pfalz Hessen	Speyer	2	2(0)	0
	Römerberg	25	25 (22)	0
	Lingenfeld	56	56 (56)	0
	Hördt	80	78 (39)	2
	Wörth-Maximiliansau	5	5(0)	0
	Stockstadt am Rhein, Riedstadt	121	121 (121)*	0
		<b>602</b>	<b>516 (239)</b>	<b>86</b>



Photo: Erika Maul, JKI

Duplication sites of Ketsch population:  
*ex-situ:*

- Geilweilerhof
- Botanical Garden Karlsruhe (KIT)

*in-situ:*

- Kühkopf/Hessen

## **Historical occurrence of *Vitis sylvestris* in the Rhine Valley**

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## **Die Wildrebe in Mitteleuropa**

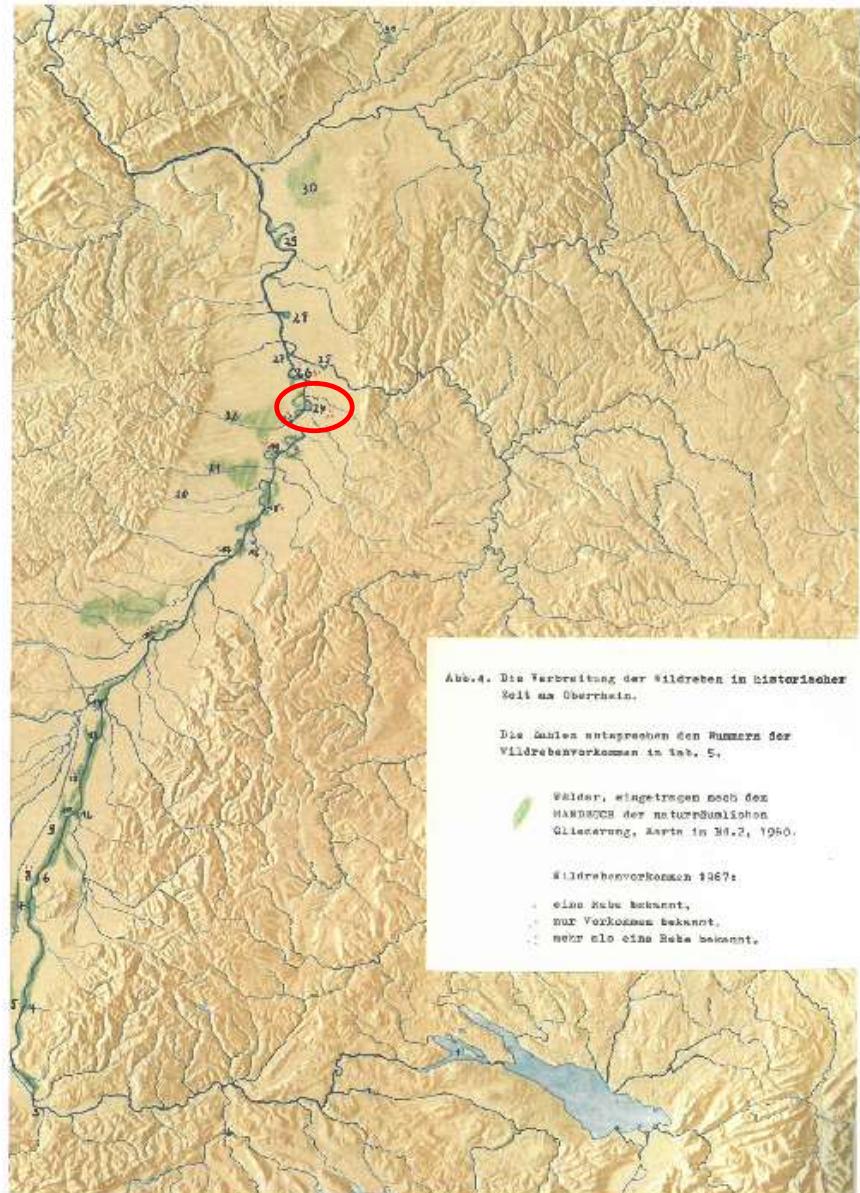
# Diplomarbeit

# Fritz Schumann

# 1967

# Ketsch Island

Abb. 4. Die Verbreitung der Wildreben in historischer Zeit am Oberrhein (siehe auch Tab. 5)



## *The wild grape *Vitis sylvestris* on the Ketsch Island*



## *The wild grape Vitis sylvestris on the Ketsch Island*



## Ketsch 18

Vitis sylvestris climbing up  
the oak tree

September 2011



Photo: Josef Hermann

## Ketsch 18

Supporting oak tree fell  
down in 2015



## Autumn coloration of leaves



Photo: Ursula Brühl, JKI

Ketsch 96



Photo: Norbert R. Kowarsch



Photo: Erika Maul, JKI

October 2015



Photo: Norbert R. Kowarsch

Collection of seeds

September 2011



Photo: Erika Maul, JKI

## Ketsch 53 uses 11 supporting trees - collection of seeds



Photo: Erika Maul, JKI



## Ketsch 51

Tiny canes climb up the  
oak tree



Photo: Erika Maul, JKI

Young developing shoot



Photo: Ursula Brühl, JKI

## Rescue of a Ketsch individual – October 2012



Photo: Ursula Brühl, JKI

Photo: Ursula Brühl, JKI



Photo: Ursula Brühl, JKI

## Rescue of a Ketsch individual – October 2012



Photo: Ursula Brühl, JKI

Norbert Krotz, Gloria Ledesma-Krist, Ernst Heene



Thank you for your  
attention