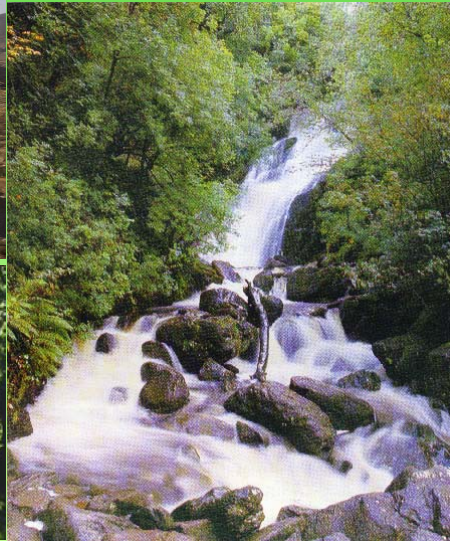


# GROUNDWORK Rhododendron Management in Killarney National Park



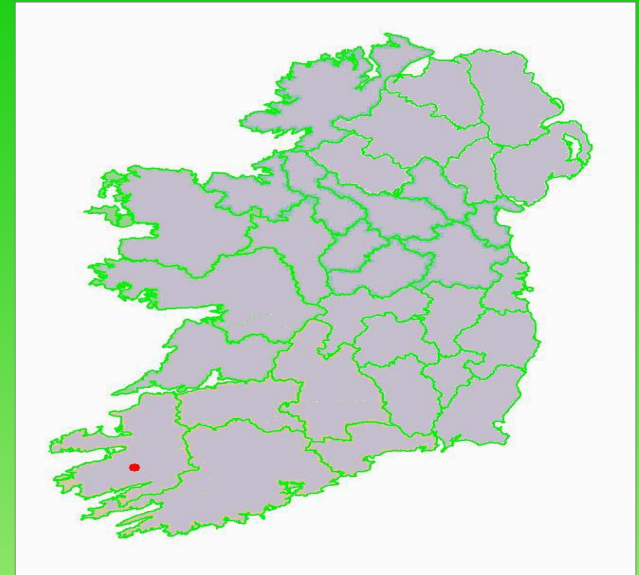
Volunteers Conserving Irish Woodlands



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# Killarney National Park

- Atlantic climate - mild and moist
- Old red sandstone uplands - (Macgillycuddy Reeks) and limestone lowlands
- Large areas of semi-natural habitats and demesne landscapes
- Extensive remnants of ancient semi-natural woodlands



# Killarney Woodlands

- 1,200 ha within KNP
- Carr
- Yew woodland
- Mixed woodland
- **Acid oakwoods**



Strong Atlantic element  
Lusitanian and rare species  
Indigenous red deer & Japanese sika deer



Restricted natural regeneration  
Overgrazing  
Rhododendron infestation

# Rhododendron in Killarney



- Introduced by early 19<sup>th</sup> Century
- Ornament, game cover, shelter
- ~ 900 ha of infested woodland by 1990
- Ongoing encroachment into new areas

# Impact of Rhododendron



Can reduce ground light levels to 2% daylight

Eliminates ground flora by shade - reduces biodiversity and inhibits tree regeneration

	Infested	Not infested	Source
No. seedlings per m <sup>2</sup>	0.5	20	Higgins et. al 2001
No. plant species	14	55	Kelly 1981
No. Mice & Voles	lower	higher	Becker 1988
No. birds	lower	higher	Jones 1972, Freeman 1999
No. Kerry slugs	2	42	Barron 1998

# Rhododendron Management in KNP

## Inherent Difficulties

Need to kill rootstock

Resilience to herbicides

Abundant seed production



## Local Factors

Extent

External sources

Access

Terrain

Climate & seed bed



# Rhododendron Management in KNP

Aim: Clearance of 75% of the 1990 infested area (= 675 ha) by 2010

1. Contractors
2. Park Staff with some assistance from volunteers
3. GROUNDWORK



# GROUNDWORK

Voluntary organisation affiliated to the Irish Wildlife Trust (IWT)

To undertake vital conservation tasks that otherwise would not be carried out

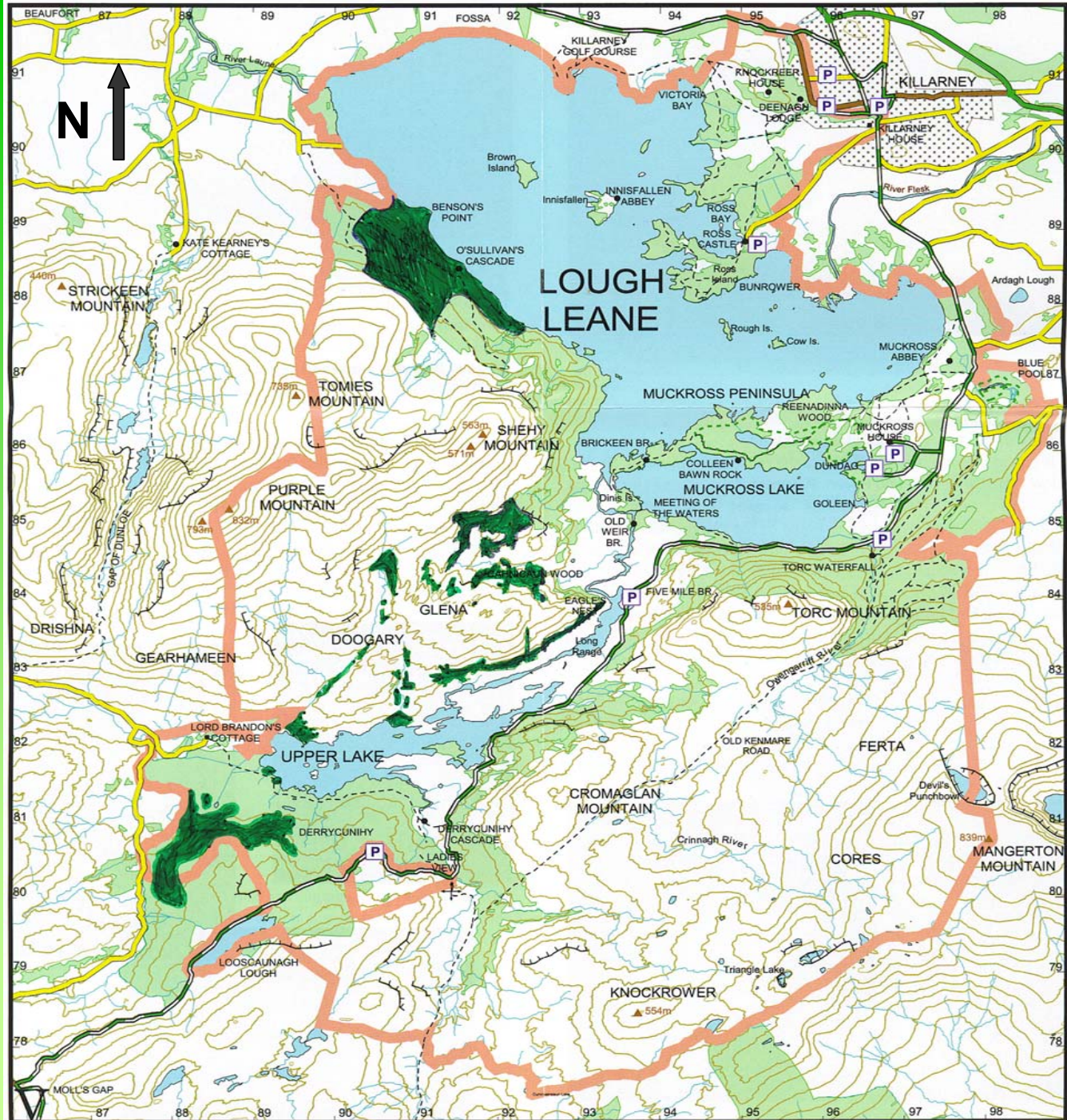
Workcamps in KNP every summer since 1981

Supported by National Parks & Wildlife Service



# GROUNDWORK Strategy

- Depends on prevention of any seed production once initial clearance has been undertaken
- Whole site approach
- Prioritisation of work
- Clearance from the 'outside-in' , working with prevailing wind
- Detailed mapping and planning and strict adherence to work schedule



# Ecological Factors to consider

## 1. Rhododendron is a vigorous seed producer

- Flowering annually from 10-12 years onwards
- Each flower head can produce up to 7,000 seeds per annum
- Tiny seeds; dispersal by wind, water & vectors, up to c. 1 km
- Seed bank
- Germination sites



# Ecological Factors to consider

2. **Rhododendron regrows vigorously when cut**
  - Regrowth can arise even from small root fragments
  - Regrowth can produce flowers within 1-2 years (but usually 3-4 years)
  - Regrowth flowers more heavily than 'virgin' infestation

3. **Rhododendron regrowth & herbicides**

- Surfactants required
- All stems must be treated
- Dry conditions required



# GROUNDWORK Clearance Method

- Three phases over 11 years
- Workcamps run June -September each year
- 20-25 volunteers participate each week, overseen by experienced voluntary leaders
- Detailed work schedule is devised and strictly adhered to
- Priority given to maintaining cleared areas free of Rhododendron
- Quality control applied

# GROUNDWORK RHODODENDRON ERADICATION STRATEGY

## Phase 1

All large rhododendron plants are cut down  
All possible stumps are removed using mattocks  
Any remaining plants, including seedlings, are removed

2-3 years  
after  
initial  
clearance

0-2 years  
after  
initial  
clearance

Remaining stumps treated/regrowth sprayed

## Phase 2

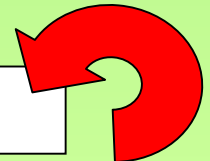
Brush piles are burned as necessary, ensuring uprooted stumps are killed  
All seedling that have germinated since initial clearance are removed  
Sprayed/treated stumps are checked and treated again if required

8 years  
after  
initial  
clearance

**Repeat every 6-8  
years while  
potential seed  
source remains**

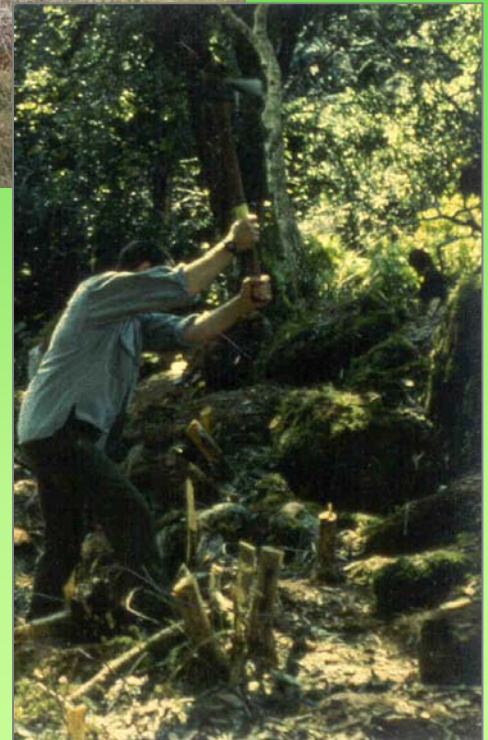
## Phase 3

Systematic check through area for seedlings



# Phase 1 - Preliminary Clearance

- Cut branches with bow saws
- Pile branches for later burning
- Dig out stumps with mattocks
- Sweep through for smaller plants/seedlings



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## Phase 2

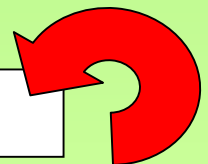
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**Repeat every 6-8  
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## Phase 3

Systematic check through area for seedlings



# Phase 2 - Advance & Final Clearance

Burning of the brush cut during preliminary clearance

Ensuring that all piles of roots are dead

Systematic sweeping of the area to:

- ensure that all mature plants have been removed or killed
- Uproot any small plants that were missed during preliminary clearance

# GROUNDWORK RHODODENDRON ERADICATION STRATEGY

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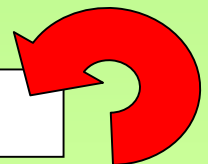
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## Phase 3

Systematic check through area for seedlings



# Phase 3 - Maintenance

- Maintains cleared areas free from reinfestation
- Carried out every 8 years, so that no rhododendron grown from seed is allowed to mature and produce seed
- Systematic and complete coverage of area is required

5,000 volunteer  
weeks of work since  
1981

> 350 ha woodland  
have been cleared  
of Rhododendron,  
and are maintained  
clear



Volunteers Conserving Irish Woodlands



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