

# Weeds of the INEEL



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## Weed List

- Black Henbane  
(*Hyoscyamus niger*)
- Canada Thistle  
(*Cirsium arvense*)
- Cheat Grass  
(*Bromus tectorum*)
- Field Bindweed  
(*Convolvulus arvensis*)
- Halogeton  
(*Halogeton glomeratus*)
- Hoary Cress  
(*Cardaria draba*)
- Leafy Spurge  
(*Euphorbia esula*)
- Musk Thistle  
(*Carduus nutans*)
- Puncture Vine  
(*Tribulus terrestris*)
- Rush Skeletonweed  
(*Chondrilla juncea*)
- Russian Knapweed  
(*Acroptilon repens*)
- Scotch Thistle  
(*Onopordum acanthium*)
- Spotted Knapweed  
(*Centaurea maculosa*)

## Introduction

In recent years, the invasion of weeds has become a personal issue. People with no knowledge of invasive species are suddenly finding strange plants taking over yards and gardens. More so, these plants are finding homes on our pristine range and forested areas where they are not so readily noticed. The Idaho National Engineering and Environmental Laboratory (INEEL) acknowledges eleven noxious weeds currently found onsite. There are two other locally problematic weeds also included in our list.

The most effective method of control is prevention and early detection. By providing information to the public, detection is much more likely to occur. When weeds are found, they can be mapped, monitored, and controlled. Without help from private entities, weeds continue to march across the landscape infesting more and more area.

The goal of this handbook is to provide easy access to pictures and information on how to identify and control the weeds found at the INEEL.

## **Black Henbane** **(*Hyoscyamus niger*)**

**GROWTH HABIT:** Annual or biennial, reproduces by seed.

**ROOTS:** Thick, fleshy taproot.

**STEM:** 1-3 ft tall, entire plant covered with greasy hairs.

**LEAVES:** Up to 8 in long and 6 in wide with shallow lobes and a heavy scent.

**FLOWER:** Five-lobed showy flowers borne on spikes, 2 in across, greenish-yellow with deep purple veins and throats.

**SEEDS:** Hundreds of black seeds contained in 1 in urn-shaped fruit.

**OTHER:** Narcotic and poisonous to humans.

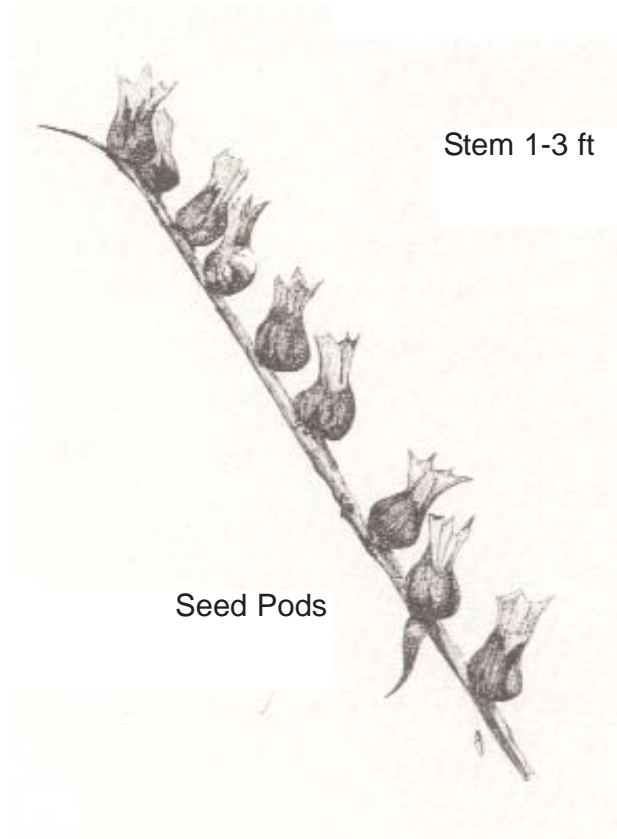
**CONTROL:** Excellent with chemicals and pullable by hand.



# Black Henbane



Flower up to 2" across



Stem 1-3 ft

Seed Pods

## Canada Thistle (*Cirsium arvense*)

**GROWTH HABIT:** Perennial, reproduces by seed and creeping roots.

**ROOTS:** Extensive and creeping, will produce 12 horizontal ft in a year.

**STEM:** Stems are single, up to 5 ft, branched near top, ridged, and hollow.

**LEAVES:** Highly variable, deeply cut oblong or lance-shaped, up to 6 in, yellowish spines.

**FLOWER:** Purple to lavender, occasionally white, spineless heads up to 1/2 in diameter.

**SEEDS:** Slender, tan, 1/8 in long, 40 to 80 per head.

**CONTROL:** Biological is available but with only poor to fair results. A combination of mechanical, chemical, and grazing is more effective.



## Canada Thistle

Heads up to 1/2 in diameter



Stems up to 5 ft





## **Cheat Grass** **(*Bromus tectorum*)**

**GROWTH HABIT:** Annual, reproduces by root tillers and seed.

**ROOTS:** Fibrous with 1 to 20 tillers, up to 12 in deep.

**STEM:** 2 in to 2 ft tall depending on water availability.

**LEAVES:** Fine downy hairs on blades, sheaths, glumes, and lemmas.

**SEEDS:** In good conditions, can produce 1+ billion seeds/acre, with up to one year viability in range conditions.

**OTHER:** Entire plant appears reddish-purple at maturity.

**CONTROL:** Long term chemical. Extensive combinations of all other methods.





## Cheat Grass



Stem 2 in to 2 ft tall



## Field Bindweed (*Convolvulus arvensis*)

**GROWTH HABIT:** Perennial, reproduces by seeds or rootstocks.

**ROOTS:** Very extensive, up to 30 ft deep.

**STEM:** Up to 6 ft, twisted, and will either form dense mats or climb.

**LEAVES:** Alternate, dark green, up to 2 in, variable in shape (similar to an arrowhead).

**FLOWER:** White or pink, funnel shaped, about 1 in wide with two bracts found 1/4 to 1 in below the flower.

**SEEDS:** Hard and triangular, 4 per capsule.

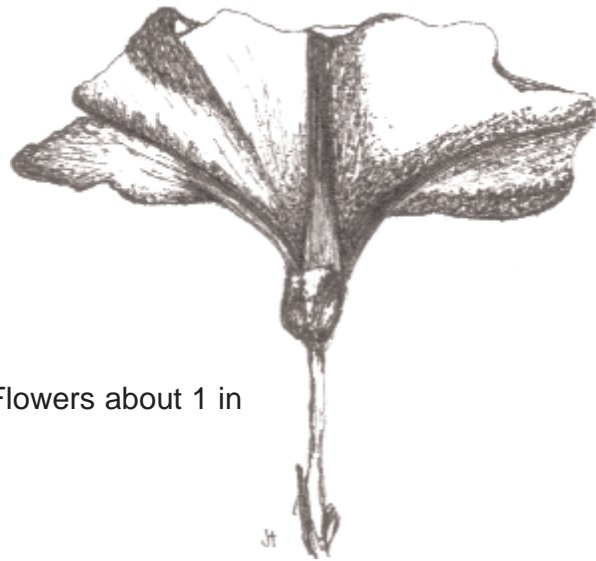
**CONTROL:** Good chemical control or use of tillage for multiple years.



## Field Bindweed



Stems up to 6 ft



Flowers about 1 in

## **Halogeton** **(*Halogeton glomeratus*)**

**GROWTH HABIT:** Reproduces only by seed.

**STEM:** 6 to 24 in, one inch of stem may produce up to 75 seeds.

**LEAVES:** Sausage-shaped, fleshy with a short spine as outer point.

**FLOWER:** Very small, spiral around each branch, may be any shade of green, yellow, or red.

**SEEDS:** Billions.

**OTHER:** Needs disturbance, competes poorly with native vegetation. Absorbs salt from soils (prefers alkaline desert soils). Extremely poisonous to sheep.

**CONTROL:** Chemicals can be used but best treatment option is to reintroduce natives.



# Halogeton



Stems 6 to 24 in



Flower 1/4 in

## Hoary Cress (*Cardaria draba*)

**GROWTH HABIT:** Perennial, reproduces through both seed and creeping roots.

**ROOTS:** 12 to 30 ft deep within three years. Taproot and laterals.

**STEM:** 1 to 3 ft.

**LEAVES:** Grayish-green, clasping, shaped like arrowheads, lightly pubescent, up to 4 in long.

**FLOWER:** White with four petals,  $\frac{1}{4}$  in across, blooms in April/May, form dense clusters.

**SEEDS:** Two reddish-brown seeds in each heart-shaped seed pod, viable for over 50 years.

**CONTROL:** Limited success, aggressive chemical re-application program essential.



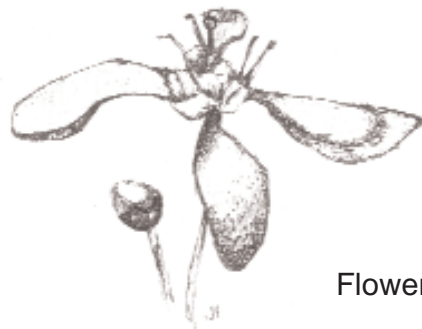


# Hoary Cress



Stem 1 - 3 ft

Seed pod



Flower 1/4 in across

## Leafy Spurge (*Euphorbia Esula*)

**GROWTH HABIT:** Perennial, reproduces by seed or creeping roots.

**ROOTS:** Brown to pink, extending up to 20 ft deep into soil.

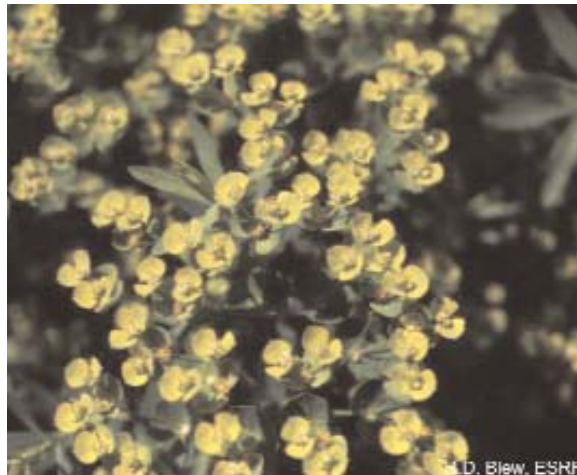
**STEM:** Up to 3 ft, exude milky latex that is semi-poisonous to cattle, horses, and humans.

**LEAVES:** Narrow, up to 4 in, alternate, and drooping.

**FLOWER:** Inconspicuous light green flowers surrounded by large heart-shaped floral bracts, blooms in mid-June.

**SEEDS:** Capsules rupture when touched and catapult seeds up to 15 ft where they remain viable 8+ years in the soil.

**CONTROL:** Biological control is available but inconsistent. Possible eradication with chemical treatment on isolated patches. Long term grazing with goats and/or sheep.



# Leafy Spurge



Stem up to 3 ft



Flower less than  
1/8 in across

## **Musk Thistle** **(*Carduus nutans*)**

**GROWTH HABIT:** Biennial or winter annual (1st year rosette, flowering stems appear in 2nd year).

**ROOTS:** Tap rooted, hollow near surface.

**STEM:** Erect and freely branching with height to 8 ft.

**LEAVES:** Dark green with light midrib, spiny, deeply-lobed, hairless on both sides, up to 10 in plus.

**FLOWER:** Deep rose to purple, 1/2 to 3 in, solitary with nodding heads.

**SEEDS:** 3/16 in long, shiny, yellowish-brown, with hair like plume.

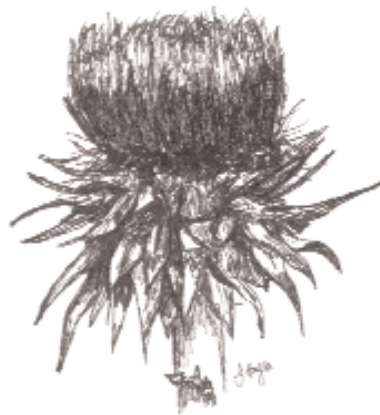
**CONTROL:** Good with chemical, biological, and mechanical methods.



# Musk Thistle



Stem up to 8 ft



Head 1/2 to 3 in

## **Puncture Vine** **(*Tribulus terrestris*)**

**GROWTH HABIT:** Annual, spreads by seeds.

**STEM:** Branch from base, slender and hairy.

**LEAVES:** Opposite, pinnate, 4 to 8 pairs of oval, hairy 1/2 in leaflets.

**FLOWER:** Yellow, five-petaled flower, 1/2 in wide.

**SEEDS:** Up to 4 contained in each of five fruit sections, each with two large divergent spines.

**OTHER:** Appears as a dense mat up to 4 ft across. Burs will cause injury to livestock and will cause flat tires on bicycles.

**CONTROL:** Biological is fair to good in certain regions, chemical is available.



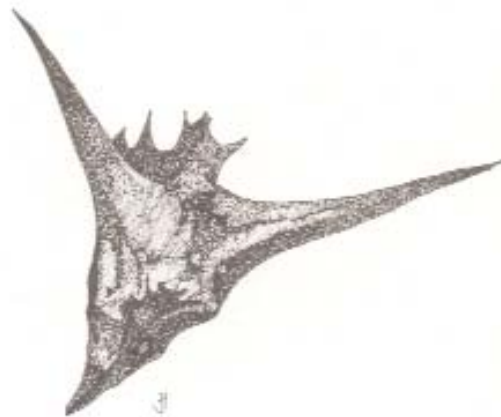


# Puncture Vine

Flower 1/2 in



Plant up to 4 ft across



Bur

## Rush Skeletonweed (*Chondrilla juncea*)

**GROWTH HABIT:** Perennial, rosette then bolts.

**ROOTS:** One main taproot up to 10 ft, lateral roots and damaged roots can create new plants.

**STEM:** 1 to 4 ft, lowest 4 to 6 in covered with coarse brown hairs, produces milky latex.

**LEAVES:** Small, lance-shaped leaves, upper leaves are inconspicuous.

**FLOWER:** Yellow flowers are scattered among branches, 3/4 in diameter.

**SEEDS:** Ribbed with soft, white plume, up to 15,000 seeds per plant.

**CONTROL:** Biological can be effective in large infestations. Chemical requires long-term consistency. Grubbing works on small scale if monitored and maintained.

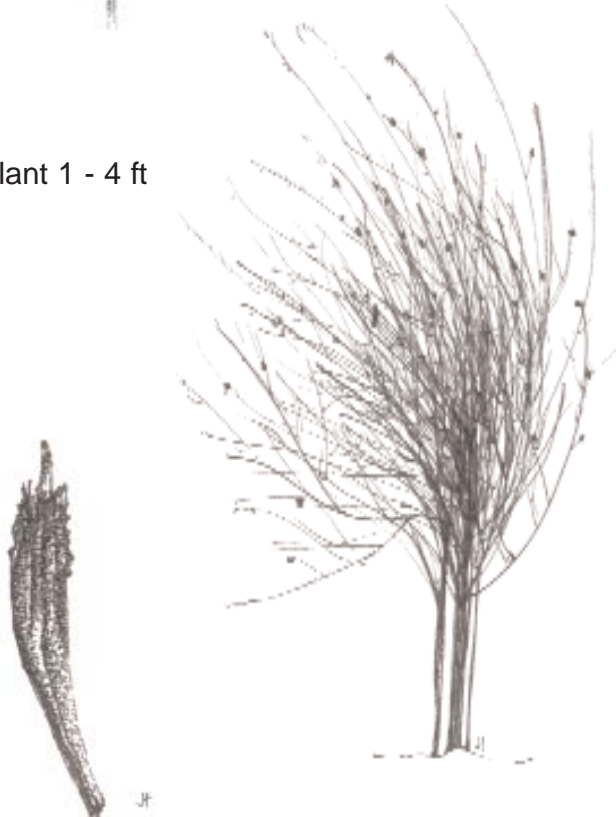


# Rush Skeletonweed



Flower 3/4 inch

Plant 1 - 4 ft



Seed

## Russian Knapweed (*Acroptilon repens*)

**GROWTH HABIT:** Perennial.

**ROOTS:** Dark brown to black, scaled, up to 23 ft deep, 10 to 12 in diameter.

**STEM:** Tall, branched stems up to 4 ft, more upright than other knapweeds.

**LEAVES:** Highly variable, deeply notched, and up to 6 in on the bottom and smooth, narrow, and small on top.

**FLOWER:** White, pink, or lavender-blue flowers, single, and thistle-like, greenish or straw-colored bracts.

**SEEDS:** Ivory-colored tipped by plumes that fall off at maturity.

**OTHER:** Poisonous to horses, causes chewing disease.

**CONTROL:** Biological and chemical methods are effective.



## Russian Knapweed



Flower 1/4 to 1/2 in



## Scotch Thistle (*Onopordum acanthium*)

**GROWTH HABIT:** Biennial.

**ROOTS:** Large, fleshy taproot.

**STEM:** Entire plant is covered with fine, woolly hair, creating a silvery-gray appearance, very spiny, up to 8 ft tall.

**LEAVES:** Up to 2 ft long and 1 ft wide with spines, hair on both sides, coarsely-lobed, distinct white midrib.

**FLOWER:** Violet to reddish flowers, 1 to 2 in diameter, solitary, spiny bracts, 2 or 3 on a branch.

**SEEDS:** Smooth, slender, plumed seeds.

**CONTROL:** Chemical control excellent on small plants.





## Scotch thistle



Stem up to 8 ft



Flower 1/2 in diameter

## Spotted Knapweed (*Centaurea maculosa*)

**GROWTH HABIT:** Perennial or biennial, reproduces by seed.

**ROOTS:** Stout tap root.

**STEM:** 6 in leaves on first year rosette, stem up to 4 ft in following year.

**LEAVES:** Pinnately divided (feather-like).

**FLOWER:** Abundant, ½ in wide flowers, solitary on branch tips, pink to purple, occasionally white, seed head bracts are black tipped.

**SEEDS:** Dark brown to tan, tipped by plumes, 25,000 per plant, 8 year viability.

**CONTROL:** Biological is available and effective. Chemical is excellent and timing is irrelevant. Other options include burning plus herbicide, hand-pulling for small infestations, and some grazing.



# Spotted Knapweed



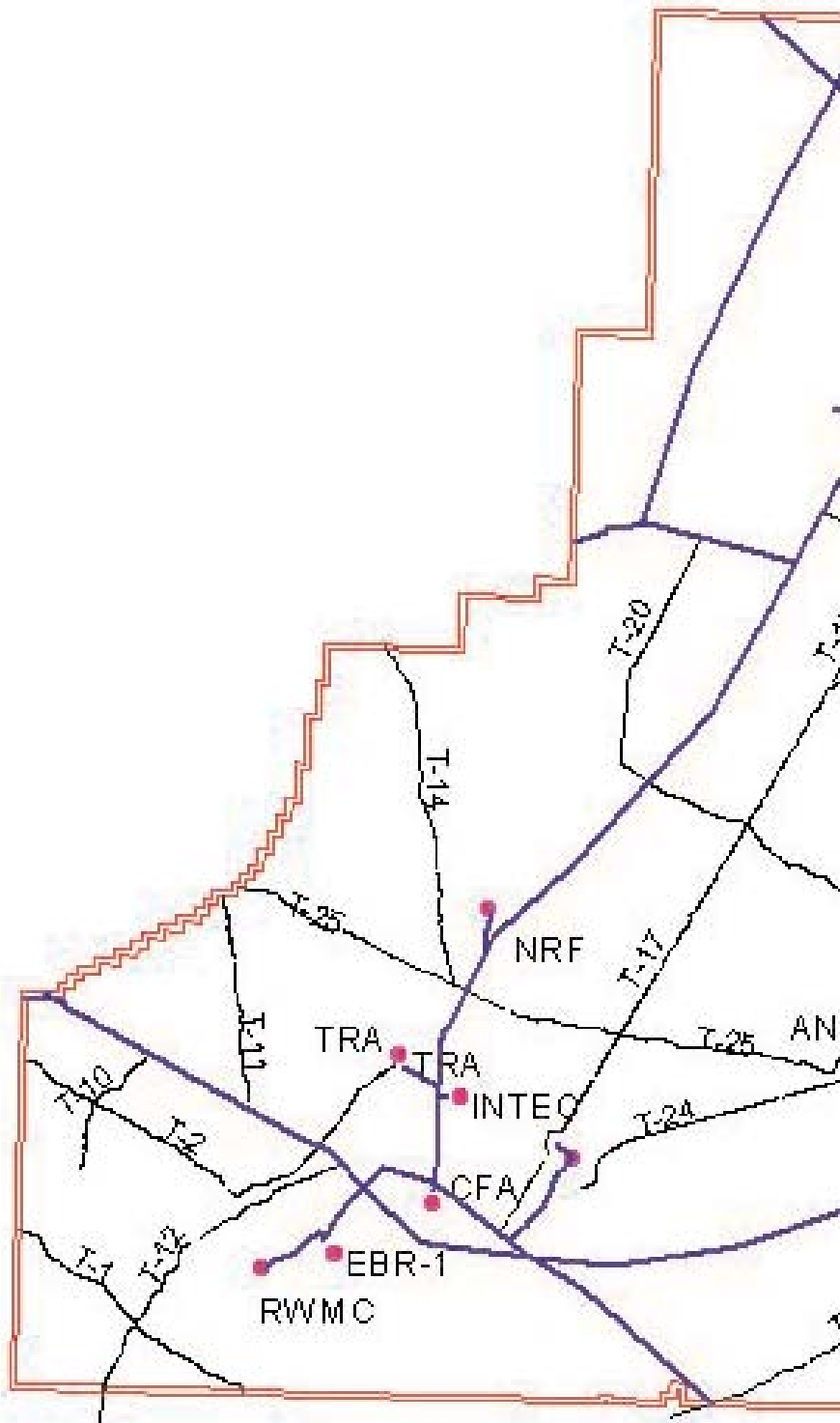
Stem up to 4 ft

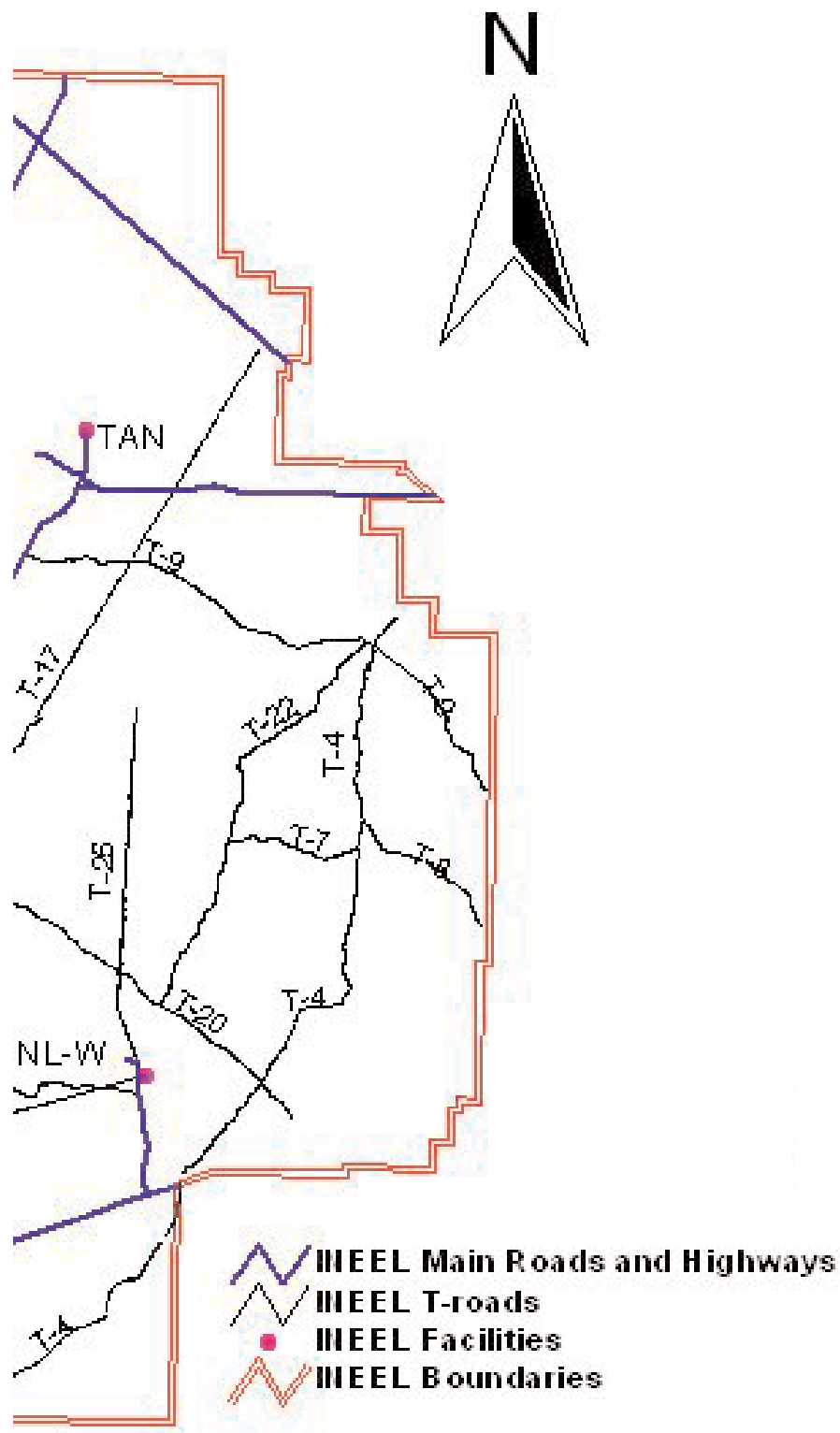


Flower 1/2 in



# INEEL T-road Map





## Contact Numbers

Stoller	525-9358
WCC	526-1515
Spill Notification	241-6400
Spill Notification (pgr)	6400
INEEL Paging	526-4444
Argonne Security	533-7283
CFA Alarm Dispatch	526-2212
CFA Medical Center	526-2356
EIRMC	529-6111



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